



Training Manual on Gender and
CLIMATE CHANGE





Training Manual on Gender and

CLIMATE CHANGE
CLIMATE CHANGE



This manual has been produced by the International Union for Conservation of Nature (IUCN) and the United Nations Development Programme (UNDP) in partnership with the Gender and Water Alliance, ENERGIA International Network on Gender and Sustainable Energy, United Nations Educational, Scientific and Cultural Organization (UNESCO), Food and Agriculture Organization (FAO) and the Women's Environment and Development Organization (WEDO) as part of the Global Gender and Climate Alliance (GGCA).



Main Author:

Lorena Aguilar

Technology Development Group

Elaine Enarson and Betty Hearn Morrow

In collaboration with:

Key messages and revision:

Module 1:

Saniye Gülser Corat, UNESCO

Adel Sasvari, IUCN

Karla Priego

Mariko Saito, UNDP

Module 2:

Saniye Gülser Corat, UNESCO

Section 2.3 Eva Maria Duer, UNEP and

Cheryl L. Anderson, University of Hawaii

Section 2.5 Adel Sasvari, IUCN

English editing:

Tiina Rajamets

Module 3:

Saniye Gülser Corat, UNESCO

Validation process:

The following specialists participated in the validation process: Xavier Moya, Itza Castañeda, Rose Mwebaza, Jeanne Josette, Adel Sasvari, Rima Abdulhadi Ras, Rose Mensa Kutin, Sandra Freitas, Brigitte Leduc, Nadia Shevchenko, Mariko Saito, Cheryl Anderson, Eva Maria Duer, Lourdes Meyreles, Natalia Kostus, Andrea Quesada, Nadia Johnson, Cate Owren, Rebecca Pearl, Hannie Meesters, Lucy Wanjiru, Stacy Alboher, and Aira Kalela. Their contributions and recommendations for this manual were extremely valuable.

Module 4:

Rebecca Pearl, GGCA

Hannie Meesters, UNDP

Lucy Wanjiru, UNDP

Amanda Dentler, WEDO

Lourdes Meyreles

Graphic design:

Laura Montoya Sancho

José María Castro Madriz

Draco Firma Gráfica S.A.

draco@ice.co.cr

Module 5:

Section 5.1.2 Gail Karlsson, ENERGIA

Module 6:

Eva Rathgeber, GWA

Publishing supervisor:

Eric Hidalgo Valverde

ABSOLUTO S.A.

ejhidalgo@yahoo.com

Module 7:

Mariama Williams and Yves Conze

Case studies:

Paula Zuniga, IUCN

Yianna Lambrou, FAO

Madhavi Malalgoda Ariyabandu, Intermediate

Printed by:

Masterlitho S.A.

San José, Costa Rica. Marzo, 2009.

The GGCA is led by a Steering Committee composed of UNDP, IUCN, UNEP, and WEDO. Members include over 25 other UN agencies and civil society organizations, and the GGCA partners with a range of governments, foundations, and private sector institutions.



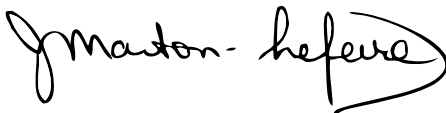
GGCA members, allies, and others are encouraged to use the training manual and may do so by requesting permission from info@gender-climate.org. Any training that draws from the manual must acknowledge the GGCA in all communications and documentation related to the training.

Prologue

For many years there has been the assumption that the negative impacts of climate change and the efforts to mitigate them have similar effects on both women and men. However, the world has progressively recognized that women and men experience climate change differently, and that gender inequalities worsen women's coping capacity. It has also been acknowledged that women are important actors of change and holders of significant knowledge and skills related to mitigation, adaptation, and the reduction of risks in the face of climate change, making them crucial agents in this area. Consequently, there is an urgent need to adopt a gender-responsive approach towards climate change policy making and programming.

Linking climate change to human development remains an important challenge, particularly because climate change is perceived by many as a purely scientific or technical issue. This publication responds to the needs of policy makers and climate change scientists to understand and address better the gender dimensions of climate change. It clarifies the linkages between gender and climate change mitigation and adaptation.

We are pleased to introduce and recommend this Training Manual, designed by the Global Gender and Climate Alliance (GGCA), as a practical tool to increase the capacity of policy and decision makers to develop gender-responsive climate change policies and strategies. At this crucial moment, on the way to negotiating the new international climate change strategy, this publication provides all actors with the essential knowledge and concrete guidance on how their actions on climate change can better answer the needs of women and men in developing countries.



Julia Marton-Lefèvre
Director General
IUCN (International Union for Conservation of Nature)



Winnie Byanyima
Director, Gender Team
UNDP (United Nations Development Program)



Foreword

Climate change is a most serious threat to sustainable development and will endanger our achievement of the Millennium Development Goals, if we do not succeed in combating it. Influencing climate change is directly linked with poverty eradication. Therefore, it is most important that we achieve a comprehensive new agreement on climate change before the end of 2009.

The most important measures for mitigating climate change will be increasing the use of renewable energy, and reforestation, as well as halting the rate of deforestation. Adapting to climate change will affect agriculture, food security and water management in rural areas. Regenerative ecological agriculture can provide a good mitigation tool. Most of these livelihoods are traditionally women's tasks in developing countries. In Africa, for instance, 80% of food production is managed by women.

The analysis of the Intergovernmental Panel of Climate Change indicates that the impacts will hit hardest the poorest regions and the poorest people who have the least resources for facing the changes brought by increasing droughts, floods or storms. Seventy percent of these poor are women.

This means that poor women will have to struggle with the impacts of climate change. However, they can also be powerful agents of change. Empowerment of women in planning and decision making as well as implementing measures influencing climate change will make our common efforts more effective especially at the local level.

This requires that men and women understand the process of climate change, and share information on counteracting its negative impacts. It will be important that women have equal access to knowledge, resources and technology, which are necessary in influencing climate change. Likewise it will be important that women participate more actively in the negotiations shaping the new comprehensive regime on climate change.

Finland is pleased to cooperate with the Global Gender and Climate Alliance, and to support its work on empowering women in order to influence climate change. This manual is an important element in promoting the understanding of climate change, its impacts and gender dimensions. We hope that this increased understanding will strengthen cooperation and we call upon all governments, relevant international organizations and financing institutions, civil society and the private sector to take part.



Aira Kalela
Special Representative
Climate change and gender
Ministry for Foreign Affairs
Finland



Contents:

Prologue	iii
Foreword	iv
Acronyms	1
Introduction	5
Module 1: Gender and gender mainstreaming	13
1.1 What is gender?	13
1.2 What is gender mainstreaming?	16
1.3 Women's special condition	17
Further resources	18
Assignments for this module	19
Notes for the facilitator	20
Case studies	21
Case study 1 Women planning sustainable agriculture	21
Case study 2 UNEP Gender Plan of Action	23
Case study 3 CBD Gender Plan of Action	25
Instruments and techniques	27
Module 2: International law instruments as a framework for mainstreaming gender in climate change	43
2.1 Human rights as a starting point	44
2.1.1 Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW)	45
2.1.2 Gender and the UN Declaration on the Rights of Indigenous Peoples	48
2.2 Gender equality	49
2.3 Disaster risk reduction	50
2.4 Gender and sustainable development	52
2.4.1 Agenda 21	52
2.4.2 WSSD Plan of Implementation	53
2.4.3 Beijing Declaration and Platform for Action and Beijing +10	53
2.4.4 Millennium Declaration and the Millennium Development Goals	54
2.4.5 The "Rio Conventions"	55
2.5 Policy coherence	61
Further resources	63
Notes for the facilitator	64

Assignments for this module	65
Table 1 Summary of the major legal instruments	66
Instruments and techniques	75
Module 3: Overview of gender issues and climate change	79
3.1 Causes of vulnerability, or specific conditions that make women, especially poor women, vulnerable to climate change	80
3.2 Added risk in securing wellbeing	81
3.3 Gender equality, climate change and the Millennium Development Goals (MDGs): what is the link?	84
Further resources	88
Assignments for this module	89
Case studies	90
Case study 1 The Mama Watoto Group	90
Case study 2 Democratizing knowledge for rural empowerment	91
Case study 3 Highlighting local coping strategies for drought	93
Instruments and techniques	96
Module 4: Gender mainstreaming in adaptation efforts	107
4.1 Human adaptation to climate change	107
4.2 Gender inequalities intersect with risks and vulnerabilities	108
4.2.1 Factors influencing risks for women in disasters	109
4.2.2 Vulnerabilities and capacities	111
4.2.3 Disaster risk management	112
4.3 The role of women in climate change adaptation	117
4.3.1 Women and men as agents of change	117
4.3.2 Differentiated relationship of women and men with the environment	117
4.3.3 Women's role in adapting to and mitigating climate change	118
4.3.4 Risk management and empowerment of women	119
4.4 Climate change adaptation and equitable access to resources	120
4.4.1 Water and sanitation	121
4.4.2 Biodiversity and ecosystems	121
4.4.3 Agriculture and food security	123
4.4.4 Coasts	123
4.4.5 Desertification	124
4.4.6 Health	124
4.4.7 Negative effects of adaptation initiatives on gender inequality and possible solutions	125

4.5	Gender-sensitive national planning	130
4.5.1	National Adaptation Programme of Action (NAPA)	130
4.5.2	Disaster Risk Reduction plans	132
	Further resources	134
	Assignments for this module	135
	Case studies	136
	Case study 1 Girls as leaders in community resilience in South Africa	136
	Case study 2 Gender roles in disasters in Pacific Island countries	138
	Case study 3 Gender-sensitive strategies for adaptation to climate change: drawing on indian farmers' experiences	140
	Case study 4 The impact of hazards on women and children: Situation in South Asia	142
	Case study 5 Women will rebuild Miami: a case study of feminist response to disaster	143
	Instruments and techniques	144
	Module 5: Gender-sensitive strategies for mitigation actions	151
5.1	Gender and mitigation efforts: establishing the connections	152
5.1.1	Carbon capture, fixing or sequestration	155
5.1.2	Reducing emissions through clean energy sources and technologies	158
5.1.3	Reduction of emissions: gender implications	161
5.1.4	Consumption: gender matters	163
	Further resources	164
	Assignments for this module	165
	Case studies	166
	Case study 1 Biofuel production in rural India	166
	Case study 2 A billion trees for climate change mitigation	168
	Case study 3 Nepal National Biogas Project: reducing emissions while providing community benefits	170
	Instruments and techniques	171
	Module 6: Gender-sensitive strategies on technology development and transfer to support actions on mitigation and adaptation	179
6.1	What do we mean by technology?	179
6.2	What does technology have to do with climate change?	180
6.3	What does climate change technology have to do with gender?	182
6.4	Areas of focus for technological interventions	183

6.4.1 Technology needs and needs assessment	184
6.4.2 Technology information	185
6.4.3 Enabling environments for technology transfer	185
6.4.4 Capacity building for technology transfer	186
6.4.5 Mechanisms for technology transfer	186
6.5 Mitigation technologies: the gender dimension	186
6.6 Adaptation technologies: the gender dimension.....	188
Further resources	190
Assignments for this module	190
Case studies	191
Case study 1 Climate change and gender equality in China	191
Case study 2 Women's vulnerability in the rural communities of Keur Moussa	192
Case study 3 Lighting up hope and communities in Nicaragua	194
Instruments and techniques	196
Module 7: Gender mainstreaming in climate change financing mechanisms	205
7.1 What is climate change financing?	205
7.2 What does climate change financing have to do with gender?	206
7.3 What are the instruments, mechanisms and modalities of climate change financing?	209
7.4 Market-based schemes and private-sector financing of climate change	213
7.5 Social, development and gender issues and the state of play in climate change financing	215
7.6 Gender and the state of play in climate change financing	217
7.7 Gender and the post-2012 climate change financing regime	221
Further resources	224
Assignments for this module	225
Case studies	226
Case study 1 The women of Amihan and the impact of climate change financing	226
Instruments and techniques	229
Appendix 1: Annotated bibliography1	235
Bibliography	263

Acronyms

ABC	Atmospheric brown clouds
AF	Adaptation Fund
AFB	Adaptation Fund Board
C5	Canada-China Cooperation in Climate Change
CBD	Convention on Biological Diversity
CCBA	Climate, Community & Biodiversity Alliance
CCCDF	Canada Climate Change Development Fund
CCFE	The Chicago Climate Futures Exchange
CCX	Chicago Climate Exchange
CDM	Clean Development Mechanism
CEDAW	Convention on the Elimination of All Forms of Discrimination against Women
CEIF	Clean Energy for Development and Investment Framework
CER	Certified emission reduction
CIDA	Canadian International Development Agency
CIF	Climate Investment Fund
CII	Confederation of Indian Industry
COP	Conference of the Parties
CO ₂	Carbon Dioxide
CPF	Carbon Partnership Facility
CRISTAL	Community-based risk screening tool – adaptation and livelihoods
CSD	United Nations Commission on Sustainable Development
CSW	Commission on the Status of Women
CTF	Clean Technology Fund
DAW	Division for the Advancement of Women
DECRIPS	United Nations Declaration on the Rights of Indigenous Peoples
DFID	United Kingdom Department for International Development
DRR	Disaster Risk Reduction
DSAP	Development Sustainable Agriculture in the Pacific
ECOSOC	United Nations Economic and Social Council
ECX	European Climate Exchange
ELIAMEP	Hellenic Foundation for European and Foreign Policy
ENERGIA	International Network on Gender and Sustainable Energy
ENDA PRONAT	Environment and Development Action in the Third World
ERPA	Emissions Reduction Purchase Agreement

EUA	European Allowance
FAO	United Nations Food and Agriculture Organization
FCPF	Forest Carbon Partnership Facility
GDI	Gender-related Development Index
GEF	Global Environment Facility
GEF-SGP	Global Environment Facility Small Grants Programme
GEO	Global Environment Outlook
Genanet	Gender, Environment and Sustainability Network
GGCA	Global Gender Climate Alliance
GHG	Greenhouse gas
GRATIS	Ghana Regional Appropriate Technology Industrial Service
GTC	Giga Tonnes of Carbon
GTZ	German Technical Cooperation Agency
HFA	Hyogo Framework for Action
HDR	Human Development Report
ICRAF	International Centre for Research in Agroforestry
IEI	International Energy Initiative
IFAD	International Fund for Agricultural Development
ILO	International Labour Organization
INCD	Intergovernmental Negotiating Committee on Desertification
INSTRAW	UN International Research and Training Institute for the Advancement of Women
Intercooperation	Swiss Foundation for International Development and Cooperation
IPCC	Intergovernmental Panel of Experts on Climate Change
ISDR	International Strategy for Disaster Reduction
IUCN	International Union for the Conservation of Nature
IWRM	Integrated Water Resources Management
JI	Joint Implementation
JLG	Joint Liaison Group
LDC	Least Developed Countries
LDCF	Least Developed Country Fund
LED	Liechtenstein Development Service
LULUCF	Land Use, Land Use Change and Forestry
MCeX	The Montreal Climate Exchange
MDG	Millennium Development Goals
MEA	Multilateral Environment Agreements
NAP	National Action Programmes
NAPA	National Adaptation Programmes of Action

NBSAP	National Biodiversity Strategies and Action Plan
NSC	National Steering Committee
NTFPs	Non-timber forest products
OECD	Organization for Economic Co-operation and Development
Oxfam	Oxford Committee for Famine Relief
PES	Payments for environmental services
ppm	Parts per million
PRA	Participatory Rural Approach
REDD	Reducing Emissions from Deforestation and Forest Degradation
RGGI	Regional Greenhouse Gas Initiative
SAGEN	South African Gender and Energy Network
SCCF	Special Climate Change Fund
SCF	Strategic Climate Fund
SDC	Swiss Agency for Development Cooperation
SIDS	Small Island Developing States
SPA	Strategic Priority on Adaptation
SPC	Secretariat of the Pacific Community
TCX	The Tianjin Climate Exchange
UN-HABITAT	UN Human Settlements Programme
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNFPA	United Nations Population Fund
UNHCR	United Nations High Commissioner for Refugees
UNIFEM	United Nations Development Fund for Women
USAID	United States Agency for International Development
WECF	Women in Europe for a Common Future
WEDO	Women's Environment and Development Organization
WEN	Environment Network
WG ABS	Working Group on Access and Benefit Sharing
WG RI	Ad Hoc Open-ended Working Group on Review of Implementation of the CBD
WHO	World Health Organization
WRI	World Resources Institute
WSSD	World Summit on Sustainable Development

Introduction

In November 2007, the United Nations Development Programme (UNDP), the International Union for Conservation of Nature (IUCN), the United Nations Environment Programme (UNEP) and the Women's Environment and Development Organization (WEDO) participated in a meeting in Tepoztlán, Mexico to explore a joint collaboration on the topic of gender and climate change. During the meeting, these institutions recognized the need for a coordinated strategy among global institutions working on this issue. This resulted in the establishment of the Global Gender and Climate Alliance (GGCA) which was formally launched on December 11, 2007 in Bali, Indonesia at the UN climate change conference. To date, more than 25 UN agencies and international civil society organizations have joined the Alliance. The primary goal of the GGCA is to ensure that climate change policies, decision making, and initiatives at the global, regional and national levels are gender-responsive.

In recent years, the main decision makers involved in climate change initiatives, programmes and policy development, have acknowledged that they don't know enough about the links between gender equality and climate change. One of the primary challenges faced by an institution or government in addressing gender equality is isolation from other similar efforts and lack of experience. For example, in a 2006 UN survey of environmental ministries, governments cited lack of capacity and understanding on the topic of gender and environment, and specifically on gender and climate change, as a reason for not incorporating gender into their work.

Among development and environmental institutions, and in the climate change arena in general, there is a need to develop a common understanding of the linkages between gender and climate change, using a language that policy makers and climate scientists can understand. The climate change arena would benefit from coordinated collaboration across sectors and institutions, and increased capacity and political commitment amongst policy makers, the UN system, civil society and the women's movement.

Therefore, central to the GGCA's strategies is the need to build capacity at global, regional and local level to design and implement gender-responsive climate change policies, strategies and programmes.

To meet the demand for improving skills in gender and climate change, and to build up a pool of trainers in different regions and countries, the GGCA

has developed the present training manual. The purpose of presenting the concepts in this manual is to increase the capacity of policy and decision makers so that efforts to mitigate and adapt to climate change are gender-sensitive.

The training manual draws on existing in-house materials (research data, analyses and extracts from international frameworks) that have been adapted or expanded but also includes newly compiled case studies to illustrate the concepts in each module. It presents key conceptual and methodological advances in gender relations in the context of climate change. The topics covered in this manual relate to the topics covered in the Bali Action Plan.

How to use this manual

The manual is modular: the trainer can choose topics and exercises according to the target group and the length of the training. The manual consists of the following modules:

Module 1: Gender and gender mainstreaming

Module 2: International law instruments as a framework for mainstreaming gender in climate change

Module 3: Overview of gender issues and climate change

Module 4: Gender mainstreaming in adaptation efforts

Module 5: Gender-sensitive strategies for mitigation actions

Module 6: Gender-sensitive strategies on technology development and transfer to support actions on mitigation and adaptation

Module 7: Gender mainstreaming in climate change financing mechanisms

Appendix: Annotated bibliography

Each module contains: a description and analysis of the topic; an outline of the learning objectives of the module and how to carry out the exercises; an explanation of the activities, procedures and timing; handouts and exercises for distribution.

At the end of the manual you will find additional material such as a bibliography, and an appendix with an annotated bibliography with the latest materials available on gender and climate change.

Notes for trainers

A variety of different actors and stakeholders can be involved in the training:

- Representatives from the Ministry of Environment
- Representatives from the Ministry of Energy
- Representatives from the National Risk Reduction Platforms
- Representatives from other Ministries, such as Agriculture, Finance, etc.
- The Ministry of Women's Affairs/Gender
- Parliamentarians
- Researchers and academics
- United Nations institutions
- Civil society organizations
- Women's groups

All these representatives/entities carry out different activities, which result in different training needs. To make your gender and climate change training as successful as possible, you should take the following ten¹ steps into consideration:

1. Target group

You must first define your target group. A training course designed for members of a women's activist group, who are not familiar with climate change issues, would contain different topics from a training course aimed at government officials working in the Ministry of Environment, who may conversely never have heard of basic gender concepts or gender analysis tools. If previous knowledge of potential target groups suggests they are too diverse, it is advisable not to bring them together in one training course, as you may need to cover too many different topics in detail, which may be less interesting for some participants.

However, in some cases, a training course may provide a platform for an exchange of knowledge (e.g., between gender experts and climate change specialists in your country) and you may want to act more as a facilitator of this knowledge-sharing process than as a trainer. You should also take into

¹ These steps have been adapted from Schneider, K. (2006). *Manual for Training on Gender Responsive Budgeting*. Eschborn, Germany: GTZ.

consideration the sex, age and social hierarchies of participants. Some people may, for example, feel too inhibited in the presence of their superiors to participate actively or contribute effectively to the training. Similarly, in some cultures, people may feel more comfortable with participating fully if women and men are provided opportunities to speak in separate spaces.

2. Training needs assessment

Having decided on the target group, you must decide what potential participants in your training course need to know, and then find out what they already know. What they should know is largely dependent on their role in their institutions, and it is important to understand their needs before planning your course. A possible way to find out what the participants' needs are is by preparing a questionnaire that participants can fill out in advance of the training.

3. Objectives of the training

Based on the training needs assessment, you need to define the objectives of the training. A training course may aim at sensitization and awareness raising, if the concept of gender and climate is completely new to participants. If participants already have some sound knowledge, then the objective may be to enable participants to define procedures and criteria to measure if gender considerations have been taken into account, for example, in financial mechanisms. You also need to define how you expect the participants to use the information they are going to receive; this will allow you to fine-tune your messages.

4. Choosing the length and timing of the training

Depending on the target group and the objectives of the training, you must decide on the length and timing of the course. Remember that some decision makers may only be able to take part in a brief session, and that some people/organizations are busier at certain times of the year. Therefore, you need to make sure you are transmitting the essential information in the most appropriate way, and at a suitable time, using the best methodology and approach.

5. Choosing relevant topics to be covered

The choice of topics to be covered largely depends on the result of the training needs assessment, the objectives of the course and its intended length.

Do not try to put too many topics into one training course or session. Participants need to have sufficient time to discuss topics and to work on exercises. If you want to cover topics that you are not very familiar with, e.g., mitigation efforts in your country, you may consider inviting an expert for a specific session or to work closely with a co-facilitator whose knowledge complements yours.

6. Defining the sequential order

When you draft your training programme, you must think of the sequential order of the topics you want to cover. The sessions should be coordinated, and you may need to lay out a sound foundation of the basics before moving on to more complicated topics.

7. Choosing the training methods and media to be used

A variety of training methods are used in each of the modules. Trainers should take care to avoid lengthy lectures or large group discussions, always remembering that each individual learns in a different way. You should try to use as many of the following training methods as the length of the course allows:

- Lectures by the trainer (using PowerPoint presentations, overhead projectors, etc.)
- Background reading material
- Group discussion
- Exercises
- Case studies
- Role-plays
- Buzz groups (usually small groups consisting of three to six people who are given an assignment to complete in a short time period)
- Presentations by participants
- Expert/ “high-profile” guest speakers
- Videos

These different methods are useful for a variety of reasons. Group discussions, for instance, allow a common understanding of certain topics to develop, whereas lectures and background reading are appropriate means of conveying knowledge. Exercises, case studies and role-plays involve participants as actors and allow them to apply their newly gained knowledge, although they are more time-consuming. However, even for a one-day training course, you should prepare one or two exercises to keep participants interested throughout the training session. You may consider a discussion that applies

training concepts to “real-world” situations, in order to encourage ownership of the concepts learned.

It is also important to consider who is delivering the message. Decision makers may be more receptive to a message coming from a well-known expert or high-profile presenter. For example you might want to have an intervention from a former prime minister or a Nobel Prize winner.

8. Designing exercises

This manual provides a number of different exercises that you may want to use in your training course on gender and climate change. However, these exercises are merely intended as suggestions: you may choose to change them slightly to adapt them to your own purposes, or indeed to create your own, completely new exercises.

9. Prepare handouts and background reading materials

You will also find handouts in the manual that you can copy and distribute in the course of your training. You may also want to consult some other useful manuals on gender and climate change and case studies from different countries, which are available on several websites. At the end of this manual you will find an appendix with an annotated bibliography listing additional reading material and useful websites. Information that is relevant to the context that the participants operate in on a daily basis, whether locally, nationally or regionally, will help the training sink in.

10. Evaluation

At the end of every training course, you should ask participants to evaluate the training. The evaluation method can vary according to the length of the training course. If you have delivered a very short training course (e.g., one day), you could ask participants to take two coloured cards and to write down on one “what I have learnt today”, and on the other “what I felt was missing today”. After a longer training course, you may find it more useful to distribute a questionnaire that has to be filled in by participants.

We would like to keep this manual up-to-date. Therefore we would highly appreciate your feedback. Any comments about your experience with using this manual, the usefulness of the different modules, handouts and exercises, and information you missed should be sent to info@gender-climate.org.

Module 1:

Gender and gender mainstreaming

13

Gender inequality is more pervasive than other forms of inequality. It cuts across other forms of inequality so that it is a feature of rich as well as poor groups, racially dominant as well as racially subordinate groups, privileged as well as 'untouchable' castes... gender inequality intersects with economic deprivation to produce more intensified forms of poverty for women than men. Gender inequality is part and parcel of the processes of causing and deepening poverty in a society and must therefore constitute part and parcel of measures to eradicate poverty (Kabeer, 2003).

Key messages

- "Sex" and "gender" are not the same: understand the crucial difference;
- Gender gaps/inequalities do exist: show available data and facts;
- Understand the implications of gender gaps/inequalities, *i.e.*, control over assets;
- Gender mainstreaming adds a "human face" to the climate change agenda;
- It is essential to integrate gender concerns into planning and implementation of climate change policies;
- Gender concerns also highlight other inequalities *i.e.*, class, ethnicity.

1.1 What is gender?

The term "gender" refers to socially ascribed roles, responsibilities and opportunities associated with women and men, as well as the hidden power structures that govern relationships between them. Gender is "... in essence, a term used to emphasize that sex inequality is not caused by the anatomic and physiological differences that characterize men and women, but rather by the unequal and inequitable treatment socially accorded to them. In this sense, gender alludes to the cultural, social, economic and political conditions that are the basis of certain standards, values and behavioural patterns related to genders and their relationship" (Riquer, 1993).

Despite recent advances, it still remains the case that in most societies there are significant differences between the rights and opportunities of women and men. These include, among others, differences in relation to land and

resource rights, possibilities for advancement at work, salaries and opportunities to participate in and influence decision-making processes. The reality is that inequality between men and women is ingrained in social norms and values around the world.

Box 1 Gender differences/gaps

According to the best available data approximately 70% of those who live on less than a dollar each day are women.

Women work two-thirds of the world's working hours yet receive only 10% of the world's income.

Women own only 1% of the world's property.

Women members of parliament globally average only 17% of all seats.

Only 8% of the world's cabinet ministers are women.

Seventy-five percent of the world's 876 million illiterate adults are women.

Worldwide women received 78% of the wages received by men for the same work, although in some regions, they have a better educational background. In some parts of the world, the wage gap between women and men is close to 40%.

Of the 550 million low-paid workers in the world, 330 million or 60% are women.

In a sample of 141 countries over the period 1981–2002, it was found that natural disasters (and their subsequent impact) on average kill more women than men or kill women at an earlier age than men.

Sources: Social Watch, 2007 and 2008; Oxfam, 2007; Neumayer and Plümper, 2007; and ILO, 2008.

Overcoming these inequalities is one of the principal focuses of the international community. To the extent that gender-based analysis seeks to highlight inequalities and promote revision of law and policy, and most importantly of the process of their development, it will of necessity tend to focus primarily on women's issues (see Box 2). In doing so, it does not seek to invert inequalities but rather to eliminate them in an attempt to eradicate inefficiencies which undermine development and hamper the realization of global human rights.

Overcoming inequalities and maximizing opportunities for full and effective participation of all sectors/stakeholders of society in policy and legislative development and implementation, is considered crucial for achieving global sustainable development objectives and human rights. Addressing gender inequalities and promoting the adoption of a gender equality perspective in the development of law and policy is therefore seen as a route to enhancing the collective welfare of societies and the global community. Where gender inequalities are enshrined in cultural practices and/or national or customary law, resistance to change may be strong. This kind of resistance is in no small part exacerbated by fears that gains by women may signify loss by men of power, prestige and benefits.

In order to make progress in the face of such realities, it is important to acknowledge these fears but frame the debate in terms of efficiency and advancement, allowing men to understand that achieving gender equality benefits not only women, but men as well. In order to achieve gender equality, there is a need to redress inequalities related to access to resources and promote equity in order to rectify the historical and social disadvantages experienced by women (see Box 2).

Box 2 Gender equality and equity

Gender equality is the concept that all human beings, both men and women, are free to develop their personal abilities and make choices without the limitations set by stereotypes, rigid gender roles, or prejudices. Gender equality means that the different behaviours, aspirations and needs of women and men are considered, valued and favoured equally. It does not mean that women and men have to become the same, but that their rights, responsibilities and opportunities will not depend on whether they are born male or female.

Gender equity means fairness of treatment for women and men, according to their respective needs. This may include equal treatment or treatment that is different but considered equivalent in terms of rights, benefits, obligations and opportunities. In the development context, a gender equity goal often requires built-in measures to compensate for the historical and social disadvantages of women.

Hence, both gender equity and equality must be pursued in a complementary manner where gender equality is the ultimate goal. In other words, in order to achieve gender equality, it is often necessary to pursue gender equity measures. The achievement of gender equality is not a one-off goal. Because progress can all too easily be eroded, gender equity needs to be constantly promoted and actively sustained.

Source: Aguilar et al., 2006.

1.2 What is gender mainstreaming?

“Mainstreaming” is a process rather than a goal that consists in bringing what can be seen as marginal into the core business and main decision-making process of an organization (UNESCO, 2003).

Gender mainstreaming is the process of assessing the implications for women and men of any planned action, policy or programme, in all areas and at all levels. It is a strategy for making women's and men's concerns and experiences an integral dimension of the design, implementation, monitoring and evaluation of policies, initiatives and programmes. Thus, gender mainstreaming ensures that women and men benefit equally from the development process that or at least inequality is not perpetuated (ECOSOC, 1997).

Gender mainstreaming is not only a question of social justice and human rights, but is necessary for ensuring equitable and sustainable human development by the most effective and efficient means. A gender-mainstreaming approach does not look at women in isolation, but instead assesses the situation of women and men – both as actors in the development process, and as its beneficiaries (ECOSOC, 1997).

Rather than adding women's participation onto existing strategies and programmes, gender mainstreaming aims to transform unequal social and institutional structures, in order to make them profoundly responsive to gender. Gender

Box 3 Impediments to the mainstreaming of gender in policy making

Gender is not viewed as a “core competence” of policy-making bodies, either in the international development community or at national and local levels. There is thus a lack of gender expertise in these bodies. Where such expertise exists, it tends to be found in either: (a) the sectors traditionally associated with gender and women's issues; or (b) the programmes that directly address women's concerns or gender equality efforts.

Limited consultation takes place with primary stakeholders. While having poor people participate directly in such consultations may take longer to achieve, the consultations have also failed to include, or have included in a very token way, organizations that work with the poor as well as those that work for gender equity goals. The ones consulted also tended to be those who already had a relationship with governments and donors.

Source: Kabeer, 2003.

mainstreaming, therefore, differs from a “women in development” approach in that its starting point is a thorough and rigorous analysis of the development situation, rather than *a priori* assumptions about women's roles and problems. Experience has shown that gender issues differ according to country, region and contextual circumstances. At the same time, experience has also shown that rigorous, gender-sensitive analysis invariably reveals gender-differentiated needs and priorities, as well as gender inequalities in terms of opportunities and outcomes. Gender mainstreaming seeks to redress these problems (Aguilar *et al.*, 2007).

The use of a gender equality perspective requires analysis and understanding of the different roles and responsibilities, needs and visions of women and men, as well as their respective levels of participation and influence in decision making. It goes beyond mere recognition of differences towards building more equitable relations between women and men.

These principles have informed UN mandates on gender mainstreaming. In 2005, for example, the United Nations Economic and Social Council (ECOSOC) adopted a resolution with a view to ensuring the mainstreaming of a gender perspective in all the policies and programmes of the United Nations system.

The ECOSOC resolution calls upon “all entities of the United Nations system, including United Nations agencies, funds and programmes, to intensify efforts to address the challenges involving the integration of gender perspectives into policies and programmes, including steps such as developing action plans for gender mainstreaming, incorporating gender into programme budgets, training on gender issues for staff, and gender analysis for policy and programme work” (see full list in Module 2).

Two fundamental impediments to the mainstreaming of gender have been identified in a seminal study on gender and poverty eradication (Kabeer, 2003). These are lack of core competence of policy-making bodies, and limited consultation with primary stakeholders (see Box 3).

1.3 Women's special condition

In applying a gender perspective, attention needs to be given to what has been called women's “special condition,” *i.e.*, the social, economic and cultural factors and mechanisms which keep women in a situation of disadvantage and subordination with regard to men (see Box 4).

Box 4 Women's special condition

Women's special condition consists of social, economic and cultural factors and mechanisms that maintain women in a situation of disadvantage and subordination with regard to men. Such subordination is expressed in varying manners depending on the historical and cultural context. Women's condition as a conceptual and operational tool for analysis entails consideration of material status, or the level to which their "practical needs" are met, such as access to water, electricity, housing, health care, employment and income-generating services. This concept connects women's material wellbeing to the specific circumstances surrounding her social environment and the roles and responsibilities that society accords to women.

Source: USAID, 2007.

Action may be required of governments to compensate for inherent inequities arising from women's special condition. In relation to climate change governance, this may include establishment of special measures to facilitate women's access to information, technologies, and participation in the definition of financing mechanism procedures, among others.

Eradicating discriminatory practices and developing meaningful opportunities for women's participation at all levels of decision making will take time and effort. It will require commitment on the part of decision makers and women themselves. Securing this commitment will require the adoption of policy and legislative measures to ensure that women's participation and consultations with women provide them with an opportunity to affect the outcome of decision-making processes. Developing such processes and ensuring consistency and continuity in regard to gender equality and equity, requires mainstreaming gender in policy making at all levels.

Further resources

Alfaro, C. (1999). *Unveiling Gender: Basic Conceptual Elements for Understanding Equity*. Toward Equity series. Costa Rica: IUCN-Arias Foundation.

Kabeer, N. (2003). *Gender Mainstreaming in Poverty Eradication and the Millennium Development Goals: A handbook for policy-makers and other stakeholders*. UK: Commonwealth Secretariat, International Development Research Centre, Canadian International Development Agency.

Kanji, N. (2003). *Mind the Gap: Mainstreaming Gender and Participation Development*. Institutionalising Participation series. UK: IIED and IDS.

Social Watch. (2008). *Gender Equity Index 2008*. Retrieved from the World Wide Web: http://www.socialwatch.org/en/avancesyRetrocesos/IEG_2008/images/img_full/exterior_eng_gde.gif

UNDP. (2000). *Learning & Information Pack: Gender Mainstreaming*. USA: Gender in Development Programme.

UNESCO. (2003). *UNESCO Gender Mainstreaming Implementation Framework 2002-2007*. Retrieved from the World Wide Web: http://portal.unesco.org/en/ev.php-URL_ID=11340&URL_DO=DO_TOPIC&URL_SECTION=201.html

Williams, S., Seed, J. and Mwau, A. (1994). *The Oxfam Gender Training Manual*. UK: Oxfam.

Assignments for this module:

Activity	Procedure	Time
Presentation of participants	Choose one introduction technique	10 minutes
Introduction of gender terms and concepts	Technique “ Introduction of gender-related concepts ”	30 minutes
	Technique “ Plate of rice ”	20 minutes
Understanding gender differences/gaps	Technique “ Analysis of gender differences/gaps ” and/or Technique “ Understanding inequalities ”	1 hour

In this respect, efforts to mainstream gender in environmental governance have advanced in the last decade with organizations such as the United Nations Environment Programme (UNEP), the International Union for Conservation of Nature (IUCN), the UN Food and Agriculture Organization (FAO), the United Nations Development Programme (UNDP) and the Convention on Biological Diversity (CBD) developing action plans. The experience generated in these spaces could serve as a reference for climate change institutions or bodies.

Notes for the facilitator:

Addressing gender-related concepts is going to depend on the amount of time you have to carry out the training session. However it is fundamental that everyone in the group understand the principles before you proceed with the rest of the modules.

It is also important to know “what is the best technique to apply.” This is going to vary according to your audience.

Case studies

Case study 1

Women planning sustainable agriculture

Since 2003, the Secretariat of the Pacific Community (SPC) has been implementing a sustainable agricultural development programme throughout the Pacific region. Its DSAP programme – Development of Sustainable Agriculture in the Pacific – has worked across 17 Pacific nations.

In the atolls, the DSAP focused on identifying problems and testing technologies with farmers to improve their traditional agricultural systems. Traditionally, the farmers used tree crop-based multi-storey agricultural systems. DSAP worked to integrate livestock into these systems.

In the lowlands, the emphasis moved from research to identification and promotion of promising technologies, such as improved crop varieties, pest and disease management, land conservation and agroforestry technologies.

DSAP also deploys communication outreach tools to better promote project efforts within member countries, for example, the use of radio, and the production and use of posters, handbooks, brochures and videos at a national level.

The project was designed on a model that encourages country-level planning, implementation and coordination. This has been achieved by establishing National Steering Committees (NSCs) involving a range

of relevant stakeholders from both government and civil society.

The primary beneficiaries are men and women farmers in Pacific Island Countries, and many local communities, comprising thousands of people, are likely to have benefited.

The initiative's focus on better environmental and natural resource management for improved agriculture and sustainable livelihoods, has resulted in spin-off benefits for both disaster risk reduction, especially in reducing risks associated with climate change, and gender equity and equality in the region.

Considering that Small Island Developing States (SIDS) have a high vulnerability to climate change, the programme has included climate change adaptation measures such as improvements to the quality of soil, more use of drought-resistant or saltwater-resistant crops, improved irrigation systems, better management of pests and diseases, evaluation of tissue plant cultures, terraced and planted hillsides to prevent landslides and run-off, and support for widespread home gardens for better access to nutritious food.

The use of a participatory needs assessment approach to improve sustainable agricultural production and food security has been key to success in mainstreaming gender while also addressing the challenges of hazards

such as drought, flooding, rising sea levels, and other hazards that climate change is predicted to intensify.

DSAP has used its Participatory Rural Approach (PRA) model to identify the needs of women, men and youth throughout the community. For example, men and women plant and work with different crops in different islands. This consultative process listened to local needs, in order to find the right tools and appropriate technologies in response.

The project worked at the national and at the community level, and involved all stakeholders in a participatory consultative process. Gender perspectives are embedded in the approach.

The setting up of national mechanisms to ensure that all relevant stakeholders have been involved in the project has taken time, involving a considerable investment in regional, national and local consultations. This has been followed by a painstaking process of establishing sustainable linkages with rural communities, developing their trust and understanding. However, the benefits of this approach are now being realized at the country and community level, in that the right agricultural technologies have been identified and adopted to overcome the right problems, improving production.

In 2007 the DSAP Programme was awarded the SPC Gender Award for its significant efforts to integrate women as well as youth in its activities into many different ways, including its recruitment process and its capacity-building activities using gender indicators as a means of measuring women's participation.

The project also includes other measures to ensure that gender is included throughout the implementation of the initiatives, such as: (1) appointment of gender focal points and an advisory board; (2) design and implementation of gender sensitivity training to staff and members to incorporate gender analysis approaches; (3) capacity building of both men and women from the communities; and (4) promotion of technological training and participation of women, among others.

DSAP has been implemented in: Fiji, Cook Islands, Federated States of Micronesia, French Polynesia, Kiribati, Marshall Islands, Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, Vanuatu, and Wallis and Futuna.

Sources:

ISDR. (2008). *Gender perspectives: Integrating Disaster Risk Reduction into Climate Change Adaptation. Good Practices and Lessons Learned*. Switzerland: ISDR.

Press release. (2007). "CRGA 37 – SPC Gender Award 2007 presented to LRD for its gender-inclusive approach". Retrieved on September 23, 2008 from: http://www.spc.int/corp/index.php?option=com_content&task=view&id=146&Itemid=27

Case study 2

UNEP Gender Plan of Action

The United Nations Environment Programme has a specific mandate and niche in the field of environment and development. UNEP has played a pioneering role in linking women and environment since 1985, when it held a special session on women and the environment at the Third World Conference on Women held in Nairobi. Also, the XVII, XVIII and XIX sessions of the Governing Council of UNEP highlighted the role of women in environment and development.

After the appointment of a gender focal point in 1999, UNEP submitted a report to the Governing Council at its twentieth session on the role of women in environment and development (UNEP/GC.20/10). The UNEP programme of work 2004–2005 included a commitment to make gender a cross-cutting priority in all of its programmes. In the domain of international environmental governance, the Bali Strategic Plan for Technology Support and Capacity-building, 2004, requests UNEP “to integrate specific gender-mainstreaming strategies, as well as education and training for women, in formulating relevant policies, and to promote the participation of women in environmental decision-making.”

In 2004, pursuant to the Global Women’s Assembly on the Environment: Women as the Voice for the Environment, Governing Council decision 23/11 on gender equality in the field of the environment underlined the need to improve UNEP’s internal capacity in these respects. Despite these many isolated efforts towards

gender equity and equality, for many years, governments and civil society organizations, both at the national and international levels, have been requesting that UNEP define a strategy in relation to gender.

The UNEP Gender Plan of Action (2006), which outlines a framework for integrating a gender perspective within all UNEP divisions, branches, units and activities during the period 2006–2010, is the result of a series of inputs: the analysis of UNEP’s current performance in gender and the environment, including interviews with UNEP senior staff and an analysis of more than 40 internal documents. It is also based on a review of the implementation of plans of action of similar institutions and international partners.

The plan was elaborated with the support of IUCN and the Women’s Environment and Development Organization (WEDO). It constitutes UNEP’s continuing response to the global commitments of the last decades, its compliance with recommendations of international fora and major mandates within the UN system. The Gender Plan of Action was reviewed at a senior management workshop on 30 June 2006, and was subsequently presented to UNEP staff at a meeting on 3 July 2006. At the workshop, UNEP Executive Director, Achim Steiner, expressed his full commitment to implementing the Plan of Action, stating that gender mainstreaming at UNEP was required by numerous mandates and that undertaking such work was not optional.

The content of this document is also a reflection of the increasing awareness that gender equality and women's empowerment are important prerequisites for environmental conservation and sustainable development. UNEP's Gender Plan of Action reads: "Gender mainstreaming has been the primary methodology for integrating a gender approach into any development or environmental effort. Gender mainstreaming is intended to bring the diverse roles and needs of women and men to bear on the development agenda. Rather than adding women's participation and a gender approach onto existing strategies and programmes, gender mainstreaming aims to transform unequal social and institutional structures in order to make them profoundly responsive to gender. Achieving gender equality and equity is a matter of shifting existing power relationships to benefit those that are less empowered."

This Plan of Action defines the role that UNEP will play in stimulating and facilitating efforts, both in-house and with partners at the national, regional and global levels, to overcome constraints and take advantage of opportunities to promote gender equality and equity within the environmental sector. It has been defined as a changing document that will continue to evolve according to institutional, political, and global and regional realities.

The Plan has three strategic objectives:

1. To ensure that gender equality and equity and women's rights are well respected, women's positions are improved, and women's active participation is ensured throughout UNEP's policies and work;

2. To promote equality of opportunity and treatment between women and men in the environmental sector at national, regional and global levels; and

3. To increase the quality and efficiency of UNEP's work in environmental conservation and promotion of sustainable development.

The implementation of this Plan has already begun and several of the organizational measures recommended have already been accomplished: first, with the appointment of a Senior Gender Adviser; second, with the formation of a group of 15 gender focal points in UNEP's offices and divisions; and third, having each Regional Office develop and implement its own gender plan of action independently.

These new efforts will not only benefit thousands of men and women worldwide, but will also enhance the execution of UNEP's mission, since the Plan establishes strategies with reachable targets and proposes instruments to address gender concerns in UNEP technical areas.

Complete text of the UNEP Gender Plan of Action can be found at: www.unep.org/civil_society/PDF_docs/Unep-Gender-Action-Plan-5Feb07.pdf

Case study 3

CBD Gender Plan of Action

The Convention on Biological Diversity is one of the most broadly subscribed international environmental treaties in the world with 190 Parties. Opened for signature at the Earth Summit in Rio de Janeiro in 1992, the CBD is the international framework for the conservation and sustainable use of biodiversity and the equitable sharing of its benefits.

The Executive Secretary of the CBD has placed great importance on the fact that gender equality is a prerequisite to poverty eradication and sustainable development. The livelihoods of rural and indigenous peoples and those of communities living in poverty are often closely tied to the use and conservation of biodiversity. In these communities, women play a leading role in caring for their families and communities, in sharing their intellectual and social capital, and in protecting and managing biodiversity resources. In many societies, women as well as men are agents of change, but their contributions do not receive equal recognition. Gender equality between women and men has a cumulative effect of improved biodiversity management and protection, and poverty alleviation for communities.

The commitment of the CBD to mainstreaming gender considerations throughout its work started in March 2007, as the Executive Secretary appointed a Gender Focal Point in line with the internal mandates. Then, from 16–18 January 2008 in Geneva, the

Secretariat of the Convention and the Senior Gender Adviser of IUCN carried out a workshop to elaborate the CBD Gender Plan of Action.

The CBD Gender Plan of Action has been drafted on the basis of: an analysis of the current performance of CBD in the area of gender and biodiversity; a survey conducted among CBD staff; and a workshop with staff from divisions within the CBD Secretariat and with the participation of resource persons from UNEP, WEDO, the Global Environment Facility Small Grants Programme (GEF-SGP) and UNDP. The Plan is also based on a review of the implementation of the action plans of similar institutions and international partners, including UNEP and IUCN.

This Plan of Action defines the role that the CBD Secretariat will play in stimulating and facilitating efforts, both in-house and with partners at the national, regional and global levels, to overcome constraints and take advantage of opportunities to promote gender equality. It is also a reflection of the increasing awareness that gender equality and women's empowerment are important prerequisites for biodiversity conservation and sustainable development.

A presentation of the plan was made to delegates at the Sixth Meeting of the Working Group on Access and Benefit Sharing (WG ABS 6) and then approval of the Gender Plan of

Action was formalized as a decision of the Ninth Conference of the Parties (COP 9) of the CBD held in Bonn, 19–30 May 2008. The decision of the COP reads: “The Conference of the Parties welcomes the development by the Executive Secretary of the Gender Plan of Action under the Convention on Biological Diversity, (UNEP/CBD/COP/9/INF/12/Rev.1), and *invites* Parties to support the implementation of the Plan by the Secretariat.”

This Plan pursues four strategic objectives:

- To mainstream a gender perspective into the implementation of the Convention and the associated work of the CBD Secretariat;
- To promote gender equality in achieving the three objectives of the CBD and the 2010 Biodiversity Target;
- To demonstrate the benefits of gender mainstreaming in biodiversity conservation, sustainable use and benefit sharing from the use of genetic resources; and
- To increase the effectiveness of the work of the CBD Secretariat.

The period of implementation of the actions proposed is from 2008–2012. The CBD has started the process of implementation by: first, collecting and disseminating gender and biodiversity-related information; second, identifying and developing gender-biodiversity implementation tools and methodologies;

third, building the capacity of women, particularly indigenous women, to participate in CBD processes and decision making; and fourth, establishing the basis for Parties to the CBD to integrate a gender perspective into their national biodiversity planning processes.

One of the main results will be the development of a Gender and Biodiversity Web Portal and the design and dissemination of guidelines to incorporate gender considerations into the National Biodiversity Strategies and Action Plans (NBSAPs).

Complete text of the CBD Gender Plan of Action can be found at: cbd.int/doc/meetings/cop/cop-09/information/cop-09-inf-12-rev1-en.pdf

I feel like a...

27



Objective: Workshop participants introduce themselves

Materials: None

Procedure:

1. Ask the participants to think of the animal they most identify with.
2. Then ask each one to describe the animal and say why they identify with it. They should also give their names and describe any other personal characteristics they might wish to share with the group.
3. This exercise helps participants identify one another and learn a little more about the characteristics and qualities of people in the group.

My name starts with...



Objective: Workshop participants introduce themselves

Materials: None

Procedure:

1. Ask the participants to think of a characteristic they have, that starts with the first letter of their name (e.g., My name is John, I am joyful).
2. Ask each participant to present this to the group.
3. This exercise helps participants identify one another and learn a little more about the characteristics and qualities of people in the group.

Wanted

Objective: Help participants to get to know one another and introduce the topic of gender

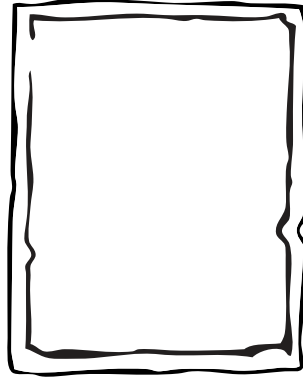
Materials: “Wanted” posters for each participant

Procedure:

1. Ask the participants to fill in the “Wanted” poster, following the format shown on the next page.
2. Participants should make a drawing of themselves in the box at the top of the page. Make sure they do not write their name.
3. Collect the posters and hand them out again. Make sure no one gets back his or her own “Wanted” poster.
4. Participants should read their posters and try to identify the person who wrote it.
5. Once identified, the person who filled out the poster writes his or her name on it and pays the reward.
6. The posters should then be taped to the wall for all to see.

Note: There are several useful methodologies to break the ice and/or encourage the participants to get to know each other. One way would be to pair people and ask them to introduce each other. In cases where participants are likely to dominate the floor/take too much time to present, the facilitator may want to use the “match technique” where presenters are asked to make their presentations while they burn a match. This gives equal time to all presenters, and may be particularly useful when addressing high-level government officials.

WANTED



Write something you LIKE TO DO that IS typical of your gender.

Write something you DO NOT LIKE TO DO that IS typical of your gender.

Write something you LIKE TO DO that IS NOT typical of your gender.

Write something you DO NOT LIKE TO DO that IS NOT typical of your gender.

REWARD

(Write down the reward for the person who finds you.)

Introduction of gender-related concepts



Objective: Introduce gender-related concepts

Materials: Concepts and definitions, box and masking tape

Procedure:

1. Before the course, write out the concepts and definitions on separate pieces of paper (see box below).
2. Place all the papers in a box.
3. Explain that the assignment is intended to draw attention to some gender concepts.

4. Ask the participants to choose a piece of paper from the box. They should then walk around the room searching for the concept or definition that matches what is written on their piece of paper.
5. As facilitator, provide assistance if there are any queries.
6. Once all the participants have made their choices, ask them to post their matching pairs somewhere where everyone can see.
7. Go round each concept and definition, correcting any errors and answering any questions.
8. Finally, ask the participants if there are any other concepts they would like clarified and what they have learned from the technique.

Gender-related concepts and definitions

Gender refers to roles, responsibilities, rights, relationships and identities of men and women that are defined or ascribed to them within a given society and context – and how these roles, responsibilities and rights and identities of men and women affect and influence each other. These roles, etc., are changeable over time, between places and within places.

Gender division of labour concerns the allocation of the tasks and responsibilities of men and women at home, at work and in society according to patterns of work that are felt to be acceptable in a particular place and time.

Gender equality refers to equal rights, voice, responsibilities and opportunities for men and women in society, at work and in the home.

Gender equity refers to fairness between men and women in access to society's resources, including socially valued goods, rewards and opportunities.

Gender gaps refer to societal differences between men and women that are felt to be undesirable.

Gender mainstreaming refers to the consideration of gender equality concerns in all policy, programme, administrative and financial activities, and in organizational procedures, thereby contributing to organizational transformation.

Gender roles refer to how men and women should act, think and feel according to norms and traditions in a particular place and time.

Gender valuation of work refers to the social and economic values attached to different tasks and responsibilities of men and women.

Gendered access to resources, facilities, services, funds, benefits and decision making refers to the differences between men's and women's rights and opportunities to make use of these resources and to take part in decision making, due to norms and values existing in a particular place and time.

Gendered control over resources and decision-making processes refers to differences between women's and men's rights and power to decide on the use of resources, gain benefits, and take part in decision-making processes, due to norms and values existing in society.

Gender perspective means that:

- A differentiation is made between the needs and priorities of men and women;
- The views and ideas of both men and women are taken seriously;
- The implications of decisions on the situation of women relative to men are considered: who will gain and who will lose; and
- Action is taken to address inequalities or imbalance between men and women.

Sex refers to the biological nature of being male or female. The biological characteristics of men and women are universal and obvious.

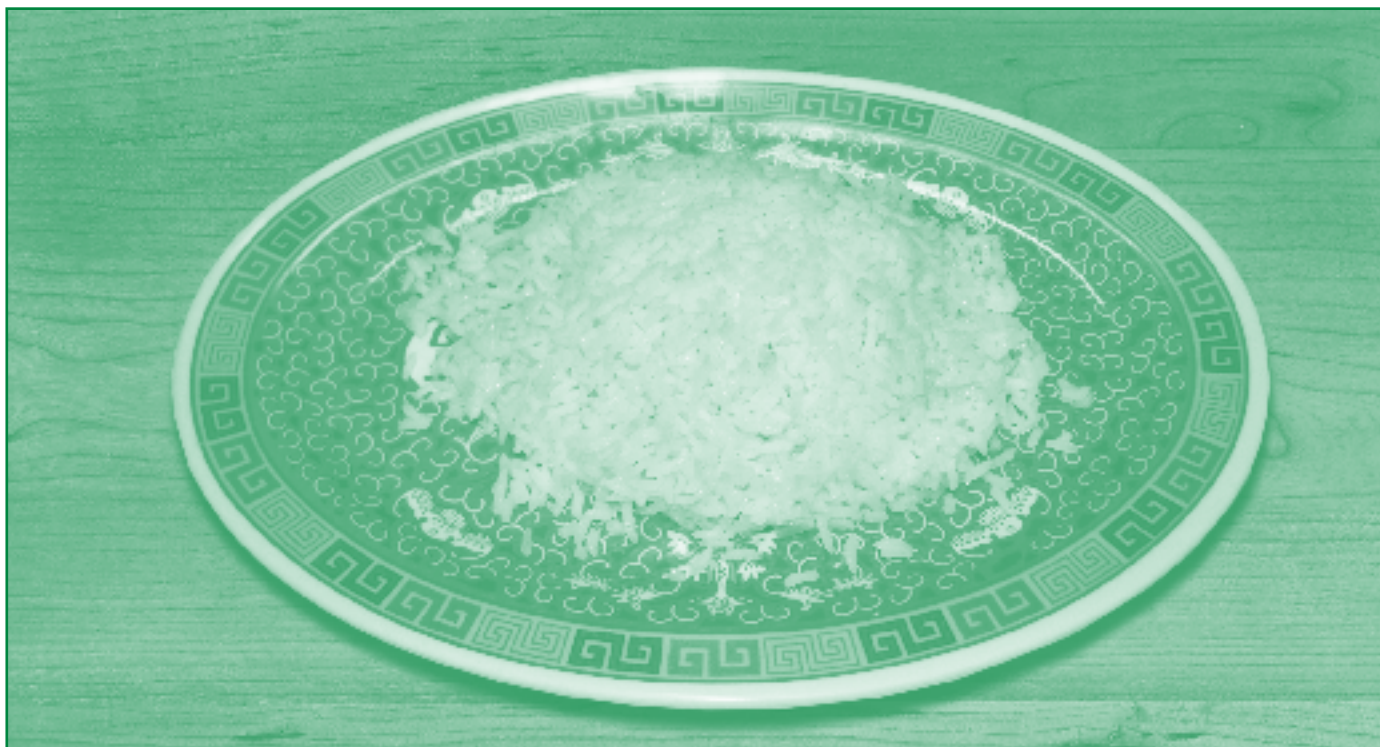
Sex roles are those that are bound to one particular sex due to biological factors, for example, giving birth.

Women's empowerment refers to the process in which women reflect upon their reality and question the reasons for their situation in society. It includes developing alternative options and taking opportunities to address existing inequalities. It enables them to live their lives in the fullness of their capabilities and their own choices in respect of their rights as human beings. In the Beijing Declaration, it was agreed that "women's empowerment and their full participation on the basis of equality in all spheres of society, including participation in the decision-making process and access to power, are fundamental for the achievement of equality, development and peace."¹

Source: UNDP. (2007). *Gender Mainstreaming: a Key Driver of Development in Environment and Energy*. USA: UNDP.

¹ Beijing Declaration, paragraph 13.

Plate of rice¹



Objective: Illustrate the concept of equity

Materials: A plate of rice (or a picture or drawing)

Procedure:

1. Take two people (a man and a woman, if possible) and give the following example:

“This man works very, very, very hard. He has too much work. He has to get up early in the morning and go to work, trying to work as much as possible. Nobody can help him. He does not sleep enough, has no time to practise any sport and he

¹ This technique was developed by Brigitte Leduc from the International Centre for Integrated Mountain Development (ICIMOD).

does not eat very well. This morning, he was in such a hurry that he did not have time to eat breakfast. Anyway, only rice was available and he prefers noodles. In a word, this man is tired."

"This beautiful woman is fit! She is doing works out every morning, eats well, and sleeps well. She works, but not too much because other people help her. This morning she had a good breakfast: rice! Her favourite meal!"

"Now, I am going about 500 m away from the man and the woman and I am going to put down a big plate of rice. It is meant for both of them - the same distance away, no discrimination."

Note: It is interesting to use an example with a woman in a powerful position and a man in a weak position. People are more likely to analyze the situation without their preconceptions getting in the way. If you put the man in the powerful position, they might try to justify his position instead of analyzing it objectively.

2. Ask the participants the following key question:

- "What do you think will happen?"

Possible answers:

- "The woman will arrive first: she can run fast whereas the man is tired and unfit."
- "The woman will arrive first and probably eat most, if not all the rice. The woman likes rice very much while the man prefers noodles. If she is not aware of his disadvantaged position, she may not leave anything for him."

Key questions:

- "Is the situation fair?"
- "Why is it not fair?"

(Remind the participants that there was no discrimination - the plate was equally accessible to both people).

Key question:

- “So, what can be done to make the situation fairer?”

Possible answers:

- “Let the man reach the plate first or put the plate closer to the man.”
- “Divide the contents of the plate into two equal parts; one for each them.”
- “Make the woman aware that this man has not eaten breakfast this morning, so she must share and maybe leave more for him.”
- “Try and find a way of alleviating this man's workload.”
- “Give the man free time to take exercise so that he can become fitter and more able to compete.”
- “Propose noodles and rice to address both their preferences. If that is not possible, maybe we should only propose noodles because the man seems to have a greater need of food than the woman.”

Note: Underline that these possible solutions are what we call “positive actions;” they aim to make the situation fairer and more equitable. They take into account the fact that some people do not have the same opportunity to access resources. There can be no equality when people do not have the same opportunities.

Analysis of gender differences/gaps



Objective: Introduce gender differences/gaps and understand some of the causes and possible solutions

Materials: **Handout 1:** *Analysis of gender differences/gaps, marker pens and flip charts*

Procedure:

1. Divide the participants into groups and appoint a leader in each group.
2. Ask the leader of the group to read out the statements.
3. If the participants are aware of other gaps they can include them on the list.

4. Ask the groups to identify the causes of the gaps and possible actions to overcome them. Participants should write their answers on the flip charts provided.
5. Ask each group to present their results. If possible, provide additional information on the causes and possible ways to overcome them.
6. Finally, ask the participants what they have learned from the assignment.

Note: If time is limited, the facilitator can prepare a quiz in PowerPoint to present to the group and generate discussion. An example of a gender quiz is the Oxfam Millennium Development Goals Gender Quiz from 2007, which can be found at http://www.oxfam.org.uk:80/generationwhy/do_something/campaigns/healthandeducation/quiz/index.htm

It is important that the facilitator includes in the analysis of gender differences/gaps, regional and national data in order to encourage and contextualize the discussion. Please remember to quote the reference for the data presented (regional and country-specific data is available in Global Gender Gap Report [www.weforum.org/en/initiatives/gcp/Gender Gap/index.htm](http://www.weforum.org/en/initiatives/gcp/Gender%20Gap/index.htm)).

Handout 1: Analysis of gender differences/gaps

According to the best available data approximately 70% of those who live on less than a dollar each day are women.

Women work two-thirds of the world's working hours yet receive only 10% of the world's income.

Women own only 1% of the world's property.

Women members of parliament globally average only 17% of all seats.

Only 8% of the world's cabinet ministers are women.

Seventy-five percent of the world's 876 million illiterate adults are women.

Worldwide women received 78% of the wages received by men for the same work, although in some regions, they have a better educational background. In some parts of the world, the wage gap between women and men is close to 40%.

Of the 550 million low-paid workers in the world, 330 million or 60% are women.

In a sample of 141 countries over the period 1981–2002, it was found that natural disasters (and their subsequent impact) on average kill more women than men or kill women at an earlier age than men.

Sources: Social Watch Gender Equity Index, 2007 and 2008; Oxfam, 2007; Neumayer and Plümper, 2007; and ILO, 2008.

Understanding inequalities



Objective: To highlight the differential gaps people have according to their class, social status and gender.

Materials: Prepare cards describing different roles people play in the community/society/government: *i.e.*, “village chief,” “widow,” “peasant worker,” “wife of a peasant worker,” etc. Contextualize the roles according to the region/country. These roles should take into account class differences as well.

Procedure:

1. Ask participants to choose a card from the box. With the cards, ask them to line up in the middle of the room where other participants can see them.

2. Ask participants to take one step forward for an affirmative answer, and one step backward for a negative answer.
3. Questions should highlight the different opportunities the card holder has in his/her stereotypical role: for example, in response to a question “Do you have control over your assets?”, or “Are you educated?” the card holder with a role “peasant wife” might take a step backward while the “village chief” takes a step forward.
4. Tailor the questions carefully according to the regional/country needs. The trainer may want to use this methodology where participants believe there are no gender inequalities.

Note: The facilitator should remind the participants once again that understanding the different gender impacts allows the participants to look at climate change issues with a HUMAN FACE.

Module 2:

International law instruments as a framework for mainstreaming gender in climate change¹

43

In the past three decades numerous international instruments have been generated to ensure gender equality and non-discrimination against women and to adopt measures related to sustainable development. This includes declarations, conventions, platforms, action plans, resolutions and agreements. They reflect the evolution of ideas and trends that guide the thinking and action of States, international organizations, academia and civil society (Aguilar et al., 2008).

Key messages

- UNFCCC is the only international treaty among the three “Rio Conventions” that does not include gender;
- The importance of rights of women is guaranteed by international instruments (CEDAW, ECOSOC Resolution 2005/31, Beijing Platform for Action);
- Gender mainstreaming into climate change regimes and policies – in particular UNFCCC and NAPAs – is not an issue of voluntary action, but a legal obligation.

Climate change impacts affect environment, human rights, sustainable development, health and all sectors of society. Positive action, if taken in these areas, could decrease pressure from climate change. Even though the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol lack specific language related to gender, there are numerous international legal instruments that mandate the incorporation of the gender perspective which also apply to the existing climate change framework.

The importance of mainstreaming gender equality for the realization of human rights, sustainable development and/or poverty eradication and disaster reduction has been recognized in a series of international instruments.

¹ The discussion on legal instruments draws heavily upon: Tobin, B. and Aguilar, L. (2007). *Mainstreaming Gender Equality and Equity in ABS Governance*; and Aguilar, L. [In press]. *Putting Words into Action...Analysis of the Status of Gender Mainstreaming in the Main Multilateral Environmental Agreements*.

These include Agenda 21 (United Nations Conference on Environment and Development, 1992); the World Conference on Human Rights (1993); the Beijing Platform for Action (4th World Conference on Women, 1995); the 1997 Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW); the Millennium Declaration (2000); the Johannesburg Plan of Implementation (World Summit on Sustainable Development (WSSD), 2002); the Convention on Biological Diversity (CBD); the UN Convention to Combat Desertification (UNCCD); and the Hyogo Framework for Action (World Conference on Disaster Reduction, 2005).

There are also internal mandates within the UN that call for the mainstreaming of gender.

These include resolutions from the Economic and Social Council (ECOSOC) as well as from the Commission on the Status of Women (CSW).

Human rights instruments and environmental laws and policies of regional organizations such as the Organization of American States, the European Council, the United African Organization and national laws in individual states may also serve as "...means to call upon governments to fulfil their obligations in terms of gender equity" (García, 1999).

2.1 Human rights as a starting point

International human rights play an important role in promoting gender equality and equity. This includes both hard and soft law in the form of conventions, UN declarations and various international policy statements and plans of action. Gender issues are addressed in a more comprehensive way in CEDAW,

Box 1 How do a declaration, a convention and a covenant differ from one another?

Declaration is a series of norms and principles drafted by states and which they pledge to abide by. However, there is no forceful component to a declaration; those States that do not observe those norms and principles are subject to "moral sanctions" before the international community (i.e., Millennium Declaration).

Convention involves a series of agreements amongst States, which include norms and principles that States are obliged to comply with (i.e., the American Convention on Human Rights).

Covenant represents an addition of new norms and principles to a previously adopted convention (i.e., the Additional Protocol to the American Convention on Human Rights in the Area of Economic, Social and Cultural Rights, "Protocol of San Salvador").

Given the obligations they impose on states, both conventions and covenants enter into force only after the State's government has ratified them. Signing these instruments is not enough for them to become legally binding.

Source: http://www.unfpa.org/derechos/preguntas_eng.htm#faq6.

the UN Declaration on the Rights of Indigenous Peoples, the UN Declaration on Human Rights, and the two UN covenants on Civil and Political Human Rights and Economic, Social and Cultural Rights.

Principles of equality and protection against discrimination are enshrined in major human rights instruments including:

- The Universal Declaration of Human Rights, which accords protection to the rights of women, prohibits discrimination and accords equality before the law.²
- The International Covenant on Civil and Political Rights, which prohibits discrimination,³ promotes equality of women's and men's rights⁴ and equality before the law.⁵
- The International Covenant on Economic, Social and Cultural Rights, which prohibits discrimination,⁶ and calls for equality of women and men regarding the rights recognized by the Covenant.

These instruments, though not legally binding by themselves, are highly influential and together with CEDAW establish a clear prohibition on discrimination. Their relevance for climate change efforts is: to further define the obligations of states to ensure that any laws and policies adopted in this area fully respect the rights of women to equal treatment before the law; to reinforce any obligations on states to secure fair and equitable distribution of benefits (funds, technology, information) and to ensure women's participation in decision making regarding adaptation and mitigation initiatives, policies and mechanisms.

2.1.1 Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW)

CEDAW is the principal instrument for the protection of women's rights, adopted in 1979 by the General Assembly of the United Nations.⁷ An Optional Protocol to CEDAW, adopted by the UN General Assembly in December 1999, came into effect December 22, 2000.⁸ The Optional Protocol establishes

² Article 7.

³ Article 2.1.

⁴ Article 3.

⁵ Article 26.

⁶ Article 2.2.

⁷ As of September 2007 CEDAW had been ratified by 185 countries (ratifications, accessions and successions): <http://www.ohchr.org/english/law/cedaw.htm>.

⁸ As of September 2007, 90 countries had ratified the Optional Protocol to CEDAW.

procedures whereby women may file complaints requesting investigation of violations of rights.

CEDAW, commonly referred to as a bill of rights for women, seeks to promote adoption of measures to secure elimination of different forms (and levels) of discrimination against women. CEDAW defines discrimination against women as: “any distinction, exclusion or restriction made on the basis of sex which has the effect or purpose of impairing or nullifying the recognition, enjoyment or exercise by women, irrespective of their marital status, on a basis of equality of men and women, of human rights and fundamental freedoms in the political, economic, social, cultural, civil or any other field”.⁹ Even if an action, law or policy were not intended to discriminate, it may be discriminatory if such is its effect (Facio, 1996).

In its preamble, CEDAW states that State Parties are bound to guarantee men and women equal opportunities in terms of economic, social, cultural, civil and political rights. State Parties agree to incorporate the principle of equality of men and women in their national constitutions and/or other appropriate legislation, and to ensure, through law and other appropriate means, the practical realization of this principle.¹⁰

In a provision of much relevance to regulation of climate change matters, the Convention obliges State Parties to take “all appropriate measures to eliminate discrimination against women in rural areas in order to ensure, on a basis of equality of men and women, that they participate in and benefit from rural development” and “participate in the elaboration and implementation of development planning at all levels”, and “in all community activities”.¹¹ CEDAW also recognizes that women should have equal rights to “obtain all types of training and education, formal and non-formal, including... the benefit of all community and extension services, in order to increase their technical proficiency”.¹²

The convention also requires State Parties “to take all appropriate measures to eliminate discrimination against women in other areas of economic and social life in order to ensure, on a basis of equality of men and women, the same rights.”¹³ In particular when it comes to financial mechanisms, there is a need to ensure that women have “access to... credit and loans, marketing

⁹ Article 1.

¹⁰ Article 2(a).

¹¹ Article 14.2.

¹² Article 14.2(d).

¹³ Article 13.

facilities, and appropriate technology..."¹⁴ as well as the "the right to bank loans, mortgages and other forms of financial credit".¹⁵

CEDAW also states that State Parties "shall take all appropriate measures to ensure to women, on equal terms with men and without any discrimination, the opportunity to represent their Governments at the international level and to participate in the work of international organizations".¹⁶

The cumulative effect of these provisions is to create obligations on countries to ensure that women are granted equal opportunities and the conditions necessary to enable their: participation in decision making; negotiation of climate change agreements; and equitable participation in access to financial mechanisms and technologies. They may also be interpreted as requiring states to ensure the fullest possible participation of women in law and policy making at the international level, where such laws and policies are necessary to prevent discrimination.

National implementation of CEDAW has occurred at various levels including incorporation in constitutional law. The Ugandan and South African constitutions, for example, contain significant provisions based on the Convention's principles which guarantee women's equality.¹⁷ The courts have also begun to develop jurisprudence on gender equality with reference to CEDAW's provisions. A presentation by the UN Special Adviser on Gender Issues and Advancement of Women, on the 25th anniversary of CEDAW's adoption, drew attention to a number of cases in which courts had relied on the Convention. This included: decisions by the Supreme Courts of Nepal, directing the government to submit legislation to Parliament to address discriminatory laws; the Constitutional Court of Guatemala upholding a challenge to the penal code, which has provisions treating men and women differently; and a decision of the High Court of Tanzania that overruled elements of customary law which denied women the right to inherit and sell land.¹⁸ These cases demonstrate the preparedness of courts to reference the Convention in a wide range of issues. It is conceivable that cases regarding climate change issues may well appear before courts based upon discrimination against women, for example relating to access to financial mechanisms and technologies, or the right to participate in decision-making processes.

¹⁴ Article 14.2(g).

¹⁵ Article 13(b).

¹⁶ Article 8.

¹⁷ Statement by Ms Rachel Mayanja, Assistant Secretary-General, Special Adviser on Gender Issues and Advancement of Women, on the occasion of the 25th anniversary of the work of the Committee on the Elimination of Discrimination against Women, New York, 23 July 2007.

¹⁸ *Ibid.*

It is important to point out that of the 195 Parties and Observer States to the UNFCCC, only eight have not signed CEDAW.¹⁹ This demonstrates that the overwhelming majority of Parties to the UNFCCC have already made commitments to gender equality and their international law by being part of CEDAW.

2.1.2 Gender and the UN Declaration on the Rights of Indigenous Peoples

On 13 September 2007, after more than 20 years of negotiation, the United Nations Declaration on the Rights of Indigenous Peoples (DECRIPS) was finally adopted. It received 143 votes in favour, four votes against (Australia, Canada, New Zealand and the USA) and 11 abstentions (Azerbaijan, Bangladesh, Bhutan, Burundi, Colombia, Georgia, Kenya, Nigeria, Russian Federation, Samoa and Ukraine). Although the UN Declaration is not a legally binding instrument it will be highly influential in defining the position to be taken within the debates and regulations under any type of agreement related to climate change.

DECRIPS specifically prohibits discrimination against women,²⁰ providing that all the rights and freedoms recognized in the declaration be guaranteed equally to male and female indigenous people.²¹ This sets a standard which should inform the implementation of the Declaration.

The Preamble to DECRIPS acknowledges the importance of indigenous knowledge, cultures and traditional practices for sustainable and equitable development and proper management of the environment.²² DECRIPS recognizes indigenous peoples' rights over the lands, territories and resources they have traditionally owned, occupied or otherwise used or acquired.²³

DECRIPS also recognizes that "indigenous peoples have the right to participate in decision making in matters which would affect their rights..."²⁴

Based on these provisions, for DECRIPS to be fully implemented will require the recognition of the role of women in climate change adaptation and mitigation initiatives and policies. Since women will be (and are) affected by climate change, their needs and interests need to be reflected at the community,

¹⁹ They are Iran, Nauru, Palau, Tonga, Sudan, Somalia and Qatar. The USA has signed but not ratified CEDAW.

²⁰ Article 22.2.

²¹ Article 44.

²² Paragraph 11.

²³ Article 26.1.

²⁴ Article 18.

national and international level. Women shall also have the right to participate equally in decision-making bodies related to climate change fora.

Potential difficulties may arise in reconciling DECRIPS provisions prohibiting discrimination and those relating to self-determination. Amongst the rights that may conflict with a gender equality approach to implementation of the declaration are the right to define the responsibilities of the individual to the community, to apply customary law to regulate community affairs, and to choose representatives to participate in decision making.²⁵ Finding the balance between individual and collective rights in a manner which enhances cultural integrity while securing the integrity of women's rights, is a challenge that will require open-mindedness, willingness to compromise and change, and commitment from all parties.

2.2 Gender equality

Within the United Nations there have been a series of mandates to ensure that gender equality principles are mainstreamed in the work that the institution is supporting.

In July 2005, at its 39th plenary meeting, ECOSOC adopted the resolution “Mainstreaming a Gender Perspective into All Policies and Programmes in the United Nations System.” This resolution calls upon “all entities of the United Nations system, including United Nations agencies, funds and programmes, to intensify efforts to address the challenges involving the integration of gender perspectives into policies and programmes, including:

- Developing action plans with clear guidelines on the practical implementation of gender mainstreaming;
- Fully incorporating a gender perspective into programme budgets;
- Ensuring continuous awareness raising and training on gender issues for all staff;
- Requiring gender analysis for both policy formulation and programmatic work;
- Ensuring commitment by senior management to gender mainstreaming;

²⁵ Tobin, 2007.

- Strengthening accountability systems for gender mainstreaming;
- Continuing to support governments and to work with civil society in their efforts to implement the Beijing Platform for Action;
- Development and institutionalization of monitoring and evaluation tools and gender-impact analysis methodologies, promoting the collection, compilation and analysis of sex-disaggregated data; and
- Promoting mainstreaming of gender perspectives into key macro-economic and social development policies and national development programmes."

Furthermore, the 52nd session of the Commission on the Status of Women (2008) identified gender and climate change as its key emerging issue. Specific provision on Financing for Gender Equality and the Empowerment of Women urged governments to: "Integrate a gender perspective in the design, implementation, monitoring and evaluation and reporting of national environmental policies, strengthen mechanisms and provide adequate resources to ensure women's full and equal participation in decision making at all levels on environmental issues, in particular on strategies related to climate change and the lives of women and girls".²⁶

2.3 Disaster risk reduction

The Hyogo Framework for Action (HFA), which resulted from the World Conference on Disaster Reduction in Kobe, Japan (2005), includes the principal mandate in relation to gender equality and empowerment of women in the context of disaster risk reduction. This Framework for Action, adopted by 168 states, sets a clear expected outcome - the substantial reduction of disaster losses, in lives as well as the social, economic and environmental assets of communities and countries - and lays out a detailed set of priorities to achieve this by 2015. An important feature of the HFA is its legally non-binding character, which allows it to set out a well-grounded set of technical and organizational requirements for reducing disaster risks, while leaving the details of its implementation to the decision of governments and relevant organizations, according to their needs and capacities. The HFA emphasizes that disaster risk reduction is a central issue

²⁶ Resolution 21 (jj) (E/CN.6/2008/L.8).

for development policies, in addition to being of interest to in various scientific, humanitarian and environmental fields.

The Framework includes the statement that a “gender perspective should be integrated into all disaster risk management policies, plans and decision-making processes, including those related to risk assessment, early warning, information management, and education and training.”²⁷ The framework recognizes that gender must be included in all areas of risk management, through the phases of the disaster cycle, including response, recovery, preparedness, and hazard mitigation.

It also includes, in priorities for action for 2005–2015, the need to develop “early warning systems that are people-centred, in particular systems whose warnings are timely and understandable to those at risk, which take into account the demographic, gender, cultural and livelihood characteristics of the target audiences, including guidance on how to act upon warnings, and that support effective operations by disaster managers and other decision makers.”²⁸

In relation to education and training it calls Parties to “ensure equal access to appropriate training and educational opportunities for women and vulnerable constituencies; promote gender and cultural sensitivity training as integral components of education and training for disaster risk reduction.”²⁹

The document “Words Into Action” (2007) serves as a guideline for implementing the HFA and further advocates a gender perspective in all phases of disaster cycles in national action strategies. In the guiding principles for developing risk reduction strategies, the document specifies: “Gender is a core factor in disaster risk and in the implementation of disaster risk reduction. Gender is a central organizing principle in all societies, and therefore women and men are differently at risk from disasters. In all settings - at home, at work or in the neighbourhood - gender shapes the capacities and resources of individuals to minimize harm, adapt to hazards and respond to disasters.

It is evident from past disasters that low-income women and those who are marginalized due to marital status, physical ability, age, social stigma or caste are especially disadvantaged. At the grassroots level, on the other

²⁷ General considerations 13(d).

²⁸ Priorities for action 2: 17 ii-(d).

²⁹ Priorities for action 3: 18 ii-(m).

hand, women are often well positioned to manage risk due to their roles as both users and managers of environmental resources, as economic providers, and as care givers and community workers. For these reasons it is necessary to identify and use gender-differentiated information, to ensure that risk reduction strategies are correctly targeted at the most vulnerable groups and are effectively implemented through the roles of both women and men" (UNISDR 2007, 5).

To support national governments in achieving the goals for risk reduction, the United Nations International Strategy for Disaster Reduction (ISDR) Secretariat convenes global platforms (June 2007, June 2009) to monitor progress and discuss emerging disaster threats, such as climate change.

2.4 Gender and sustainable development

At the international level, gender issues have been raised in numerous summits and conferences,³⁰ and there is explicit reference to the rights of women in a range of international instruments.³¹ Among these have been a number of global sustainable development agreements including Agenda 21, the WSSD Plan of Implementation, the CBD and the UNCCD, which make commitments on gender and women. The relationship between women and environment has also arisen in relation to international agreements on women and gender equality, such as the Beijing Platform for Action and its ten-year review, and the Millennium Declaration.

2.4.1 Agenda 21

Agenda 21, which establishes a blueprint for sustainable development, was adopted at the United Nations Conference on Environment and Development, in Río de Janeiro in 1992. It includes a complete chapter (24) entitled "Global Action for Women towards Sustainable Development", which calls upon governments to make the necessary constitutional, legal, administrative, cultural, social and economic changes in order to eliminate all obstacles to women's full involvement in sustainable development and in public life.

³⁰ These include: Children's World Summit (New York, 1990); United Nations Conference on Environment and Development, (Rio de Janeiro, 1992); World Conference on Human Rights (Vienna, 1993); International Conference on Population and Development (Cairo, 1994); World Summit on Social Development (Copenhagen, 1995); Fourth World Conference on Women (Beijing, 1995); Second United Nations Conference on Human Settlements (Istanbul, 1996); World Summit on Food (Rome, 1996); and United Nations Conference of Plenipotentiaries on the Establishment of an International Criminal Court (Rome, 1998).

³¹ These include the Cairo Action Programme, Agenda 21, Copenhagen Declaration on Social Development, Copenhagen Action Plan, Istanbul Declaration on Human Settlements, the UN Human Settlements Programme (UN-HABITAT), the Rome Declaration on World Food Security, Rome Action Plan on World Food Security, and the Vienna Declaration and Programme of Action which contains a whole section entitled: "The equal status and human rights of women".

Agenda 21 calls for the adoption of measures to translate its objectives into clear strategies.³² This is to be achieved through government policies, national guidelines and plans to ensure equity in all aspects of society, including women's "key involvement" in decision making and environmental management.

2.4.2 WSSD Plan of Implementation

The World Summit on Sustainable Development (WSSD) Plan of Implementation (2002), adopted in Johannesburg, promotes women's equal access to and full participation in decision making at all levels, on the basis of equality with men. It calls for mainstreaming gender perspectives in all policies and strategies, the elimination of all forms of discrimination against women and the improvement of the status, health and economic welfare of women and girls through full and equal access to economic opportunities, land, credit, education and health-care services.

2.4.3 Beijing Declaration and Platform for Action and Beijing +10

Two documents emanated from the IV World Conference on Women: the Beijing Declaration and Platform for Action. These documents established a strategy and responsibilities for State Parties. The Platform for Action warns that: "the human rights of women, as defined by international human rights instruments, will only be dead words unless they are fully recognized, protected, applied, and effectively enforced, at national legal and practical levels, in family, civil, criminal, labour and commercial codes, as well as in administrative regulations" (Paragraph 218).

Strategic Objective K of the Beijing Platform for Action commits to securing the active involvement of women in environmental decision making; integrating gender concerns and perspectives in policies and programmes for sustainable development; and strengthening or establishing mechanisms at the national, regional and international levels to assess the impact of development and environmental policies on women.

In March 2005 at UN Headquarters, the 49th session of the CSW, also known as "Beijing +10", assessed progress made since the adoption of the Beijing Platform for Action. Beijing +10 was a call to action against discriminatory laws and other violations of women's human rights. It specifically calls on Member States to enhance rural women's income-generating potential; noting the

³² Section 24(f).

importance of the agricultural sector, particularly in developing countries, and the importance of greater security of land tenure and property ownership for resource mobilization and environmental management.

2.4.4 Millennium Declaration and the Millennium Development Goals

At the 8th plenary session of the UN General Assembly in September 2000, countries adopted the Millennium Declaration, committing themselves to respecting the equal rights of all without distinction as to race, sex, language or religion.³³ The UN also adopted the Millennium Development Goals (MDGs) which are referred to as a blueprint for the realization of the Millennium Declaration. The MDGs promote poverty reduction, education, maternal health, gender equality, and aim to combat child mortality, AIDS and other diseases. The MDGs, with a target year of 2015, are an agreed set of goals that can only be achieved with the full commitment and collaboration of all actors.³⁴ Poor countries have pledged to govern better and invest in their people through health care and education. Rich countries have pledged to support them, through aid, debt relief and fairer trade.³⁵

The Declaration identifies certain fundamental values as being essential to international relations in the twenty-first century. Among other things, Signatories commit to: assuring equal rights and opportunities for women and men;³⁶ promoting the empowerment of women as an effective way of combating poverty, hunger and disease, and achieving truly sustainable development; and ensuring that the benefits of new technologies, particularly information and communication technologies, are available to all.

The Declaration is of particular interest due to its linkage of human rights, the rights of women, and the rights that stem from the UNFCCC. Taken together, these establish a platform of fundamental interrelated values on gender, environment and human rights.

According to the 2005 United Nations Development Programme (UNDP) Human Development Report, gender continues to be “one of the world’s strongest markers for disadvantage.” Reducing inequality would, therefore, be instrumental in making progress towards achieving the MDGs.

³³ Article 4.

³⁴ For a review of progress on the MDGs see www.paris21.org/betterworld.

³⁵ Retrieved on July 21, 2006, from: <http://www.undp.org/mdg/>.

³⁶ Article 6.

2.4.5 The “Rio Conventions”

As a result of the United Nations Conference on Environment and Development in 1992 in Rio de Janeiro, Brazil – a conference popularly known as the “Rio Earth Summit” – three international treaties arose: the UNFCCC, the CBD and the UNCCD, known ever since as the Rio Conventions.

The three Rio Conventions are related. Climate change affects biodiversity and desertification. The more intense and far-reaching climate change is, the greater will be the loss of plant and animal species and the more dryland and semi-arid terrain around the world will lose vegetation and deteriorate.

Due to this fact, a Joint Liaison Group, or JLG, was established in 2001 to boost collaboration between the secretariats of the three Conventions. Through the JLG, information is shared, activities are coordinated, and measures are identified that can simultaneously attack all three problems.

As indicated earlier, the UNFCCC and the Kyoto Protocol almost entirely omit reference to gender issues. This may be attributed to the initial focus on the science behind global warming as well as to the lesser momentum of the gender movement upon signature of the UNFCCC two years after the other two Conventions were signed in 1992. Irrespective of this, the above mentioned human rights, disaster risk reduction and gender instruments all have a bearing on the UNFCCC and its work.

In this context, inspiration may be drawn from the experience and successes of the two other RIO conventions, the CBD and the UNCCD, who have advanced in the mainstreaming of equality and equity considerations.

The Convention on Biological Diversity (CBD)

The CBD is an international framework for the conservation and sustainable use of biodiversity and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources. To date it has been ratified by 190 States.

It should be noted that the CBD is the only environmental agreement mentioned in the Beijing Platform of Action, in its point K: *“Encourage, subject to national legislation and consistent with the Convention on Biological Diversity, the effective protection and use of the knowledge, innovations and practices of women of indigenous and local communities, including practices relating to traditional medicines, biodiversity and indigenous technologies, and endeavour to ensure that these are respected, maintained, promoted and preserved in an ecologically sustainable manner, and promote their wider application with the approval and involvement of the holders of such knowledge; in addition, safeguard the existing intellectual property rights of these women as protected under national and international law; work actively, where necessary, to find additional ways and means for the effective protection and use of such knowledge, innovations and practices, subject to national legislation and consistent with the Convention on Biological Diversity and relevant international law, and encourage fair and equitable sharing of benefits arising from the utilization of such knowledge, innovation and practices”*.³⁷

With respect to gender or women, Paragraph 13 of the Preamble to the CBD states: *“Recognizing also the vital role that women play in the conservation and sustainable use of biological diversity and affirming the need for the full participation of women at all levels of policy-making and implementation for biological diversity conservation...”* No other reference is made to the theme anywhere in the rest of the Convention text.

Other provisions have arisen out of various Conferences of the Parties (COP) and working groups. Most have occurred thanks to the proposals of indigenous and community groups under Article 8(j):

- **Decision V/16: Article 8(j) and related provisions:** *“Recognizing the vital role that women play in the conservation and sustainable use of biodiversity, and emphasizing that greater attention should be given to strengthening this role and the participation of women of indigenous and local communities in the programme of work.”*
- **Programme of Work on the implementation of Article 8(j) and related provisions of the CBD: 1. General Principles:** *“Full and effective participation of women of indigenous and local communities in all activities of the programme of work.”*

³⁷ Strategic Objective K.1, 253c.

- Task 4 of the programme of work asks “Parties to develop, as appropriate, mechanisms for promoting the full and effective participation of indigenous and local communities with specific provisions for the full, active and effective participation of women in all elements of the programme of work, taking into account the need to:
 - a. Build on the basis of their knowledge;
 - b. Strengthen their access to biological diversity;
 - c. Strengthen their capacity on matters pertaining to the conservation, maintenance and protection of biological diversity;
 - d. Promote the exchange of experiences and knowledge; and
 - e. Promote culturally appropriate and gender specific ways in which to document and preserve women’s knowledge of biological diversity.”

All of these provisions refer specifically to women’s participation in CBD activities and do not deal directly with the promotion of equality. However, and particularly since 2007, the CBD has initiated a process focused on promoting gender mainstreaming in its regular activities.

For example, in a decision made at its second meeting in July 2007, the Ad Hoc Open-ended Working Group on Review of Implementation of the Convention (WG RI-2) urged Parties: “in developing, implementing and revising their national and, where appropriate, regional biodiversity strategies and action plans... [to] Promote the mainstreaming of gender considerations”.³⁸

In regard to National Biodiversity Strategies and Action Plans (NBSAPs), Article 6 of the CBD establishes that each Party should develop its own NBSAP or equivalent instrument. The NBSAP or equivalent instrument must reflect the way in which the country intends to comply with the objectives of the CBD and present plans, programmes and policies at the sectoral or multi-sectoral level.

³⁸ UNEP/CBD/COP/9/4, Annex, Recommendation 2/1, Annex, Paragraph 8(d).

Box 2 Examples of how gender and women's issues have been addressed in the NBSAPs

- Nepal, Swaziland and Uganda recognize that rural women depend greatly on the diversity of natural resources. Moreover, Swaziland mentions that even though this dependence exists, women are often excluded from the management of these resources. Nepal recognizes that they could have a vital contribution and proposes that women's roles should be fully recognized, as they are often the most knowledgeable about patterns and uses of local biodiversity. All the countries' documents mention that women should be included in all decision-making processes related to biodiversity.
- Women in many countries use specific resources and accumulate unique knowledge. Examples of this recognition can be found in the NBSAPs from Mali, Bhutan and El Salvador, among others. In Mali, for example, women tend to be the ones that use the shea tree, edible tamarind and fonio. Additionally, certain vegetable species are valued because women use them for basket making, weaving, and pottery making. Bhutanese women are often the ones who manage or harvest underused species that could contribute to food security, agricultural diversification and income generation. In several communities in El Salvador, women are usually the ones that have a greater knowledge of the diversity of plants and animals for medicinal purposes due to their traditional role as carers.
- Women play a key role in biodiversity conservation and, in particular, agrobiodiversity conservation. For example, in Yemen, women select seeds with specific characteristics and are in charge of growing "women's crops" such as groundnuts, pumpkins and leafy vegetables. This has the effect of raising biodiversity and food security on their farms. Additionally, in Mali it has been recognized that the calabash tree's maintenance and development is due to the uses women give to it.
- Women's economic freedom and security depends largely on agricultural activities and the use of natural resources. Bhutan recognizes that women could benefit greatly if the activities on which their livelihoods depend are supported and a sustainable use of the resources is promoted. An example that illustrates this can be found in Benin, where mushrooms are an important food supply for rural populations. Actions taken by an NGO created opportunities for marketing mushrooms, which resulted in increased incomes for women.
- NBSAPs from Guinea, Mauritius and Mali recognize that some resources used by women are collected in a way that compromises their development and regeneration. If these practices are improved and women are included in the process, conservation strategies could be more effective. In Guinea, for example, loss of soil fertility is associated with traditional techniques of smoking fish carried out by women that use large quantities of mangrove trees (*Rizophora* sp.). Many fisherwomen in Mauritius depend on octopus fishing even though the maximum sustainable yield has been exceeded because they collect female octopus before they reach maturity.

- Nepal recognizes that one of the major weaknesses of community forestry is that not all forest users are equally represented in community forestry management. They suggest that adequate attention should be paid to identify all users, to inform them of their rights and responsibilities, and to involve disadvantaged groups and women in community forestry management.
- There is a link between women's education and the preservation and conservation of natural resources. In Togo, women are responsible for the exploitation of natural resources but they have less access to education than men, e.g., the proportion of men taught to read and write is higher (69%) than that of women (38%). The lack of education hinders women's understanding of sustainable practices, which could lead to the further degradation of the resources they depend on.
- Kenya, Liberia and Zimbabwe mention that gender imbalances exist in land access and ownership. Kenya identifies land as the country's most important natural resource, and recognizes that although their statutory laws do not prevent women from owning land, women still face numerous difficulties in relation to land tenure.
- Malawi's NBSAP mentions that both HIV/AIDS and gender are key issues that affect their country's biodiversity and should be included in the biodiversity programmes.
- Some Parties, like Belize, Benin, Maldives, and Marshall Islands, have included women's groups in participatory consultation processes to formulate their NBSAP. In addition, Nepal's NBSAP proposes the formation of separate groups for men and women to ensure active participation by women. The effective inclusion of women and their issues in many local and international processes is truncated because, in many countries, men are still the ones who are in charge of public spaces, and in many working groups, there is the misconception that men guarantee the vision of "the community".

A basic characteristic of the NBSAP should be that all social groups participate actively in its preparation. Genuine representation, however, requires recognition of the stakeholders' diversity in terms of sex, age, ethnic group, income, occupation and marital status, among others.

While it is true that there were no clear guidelines or mandates on the incorporation of gender in the NBSAPs (until the 2007 meeting of the WG RI-2 in Paris), some countries had already begun to incorporate the theme, whether by presenting clear gender strategies or through the inclusion of gender considerations in some parts of their NBSAP.

In early 2008, an analysis of NBSAPs was conducted. It was determined that up to April 4, 2008, 160 of the 190 parties to the CBD had presented their

NBSAP; of the 141 examined, 77 mentioned gender or aspects related to women. Based on this analysis by Quesada-Aguilar and Mata (2008), some examples of how countries have addressed gender issues are presented in Box 2 above.

In 2007, as mentioned above, the CBD Executive Secretary launched a process for the promotion of gender equality within the Convention. As part of the celebration of International Women's Day (March 8, 2007), the Executive Secretary designated a Gender Focal Point in the CBD Secretariat.

With support and technical direction from IUCN, at the end of 2007 and early 2008 the CBD Secretariat carried out an internal process aimed at developing the Convention's first gender strategy. The plan was approved by the CBD Bureau in February 2008 and approved by the COP 9 in June of that same year: "the COP welcomes the development of a Gender Plan of Action under the CBD as presented in the document UNEP/CBD/COP/9/L.4 and invites parties to support the Secretariat in its implementation." In this way, the CBD established a historic milestone by becoming the first multilateral environmental agreement (MEA) with a strategy to promote gender equality among women and men.

The UN Convention to Combat Desertification

The Intergovernmental Negotiating Committee on Desertification (INCD) which, at the start of the 1990s, prepared the UNCCD, established that to combat desertification effectively both women and men should participate fully in the preparation and implementation of dryland development activities. The INCD also recognized that participation does not materialize just by a decision but requires special support activities that will promote women's opportunities for participating including awareness raising, training and capacity building, and education.

This convention is one of the few international instruments that established a link between the environmental situation, gender equality and social participation. This was largely because the UNCCD was always tied more with local development and the eradication of poverty (in comparison to other MEAs), given the fact that countries from the South led its elaboration.

In the initial years of its execution, the commitment to push for equality among men and women was an important element in many of the related activities carried out by the UNCCD in the local, national, regional and global sphere. In the convention's implementation, governments as well as NGOs

and international organizations provided financial and technical support for programmes directed specifically at women. Furthermore, UNCCD was characterized by its efforts to strengthen the role of women in all areas of its implementation.

The Convention also made great progress in internalizing equality between men and women in UNCCD governance, and over the years experienced women's growing participation in governing entities. However, there is still a long way to go before women and men are represented equally, and several delegates to each Conference of the Parties (COP) continue calling for the rectification of gender inequality, especially with respect to women's low participation in the Roster of Experts, the Ad-hoc Open-ended Working Groups, and in the processes of preparing the national action programmes.

However, during the COPs held to date, deliberations about the role of women and gender mainstreaming have not played a significant part in the plenary discussions of the COP or Commission on Science and Technology. An examination of the decisions at the different sessions shows that issues concerning gender and women's roles are mentioned in only a limited way; conclusions and general recommendations need considerable work before they can be translated into operational activities.

Many of the people interviewed by Knabe and Poulsen (2004) stated that gender and the role of women is frequently viewed as no more than rhetoric, and there appears to be a vacuum in terms of concrete activities. This could be interpreted as a result of limited capacity, and should be analyzed and addressed in future UNCCD initiatives.

2.5 Policy coherence

Policy coherence is an essential prerequisite of efficiency and sustainability that ensures that other policies will not jeopardize climate change efforts. As set out by Lambrou and Laub (2004), the multiplication of international instruments, sources of both hard law (such as the Rio Conventions, the CEDAW...) and soft law (such as Agenda 21, the Johannesburg Plan of Implementation, the MDGs, the Beijing Platform for Action...), make the monitoring process increasingly difficult. A harmonization of procedures and approaches between international instruments would facilitate the monitoring of these instruments from cross-sectoral perspectives, such as gender, sustainable development, the fight against poverty, and climate change.

In terms of the legal instruments, policy coherence should be ensured in three different dimensions as regards climate change and gender:

- **Coherence between the “Rio Conventions.”** Both climate change and gender affect all Rio Conventions. Therefore, it is beneficial to adopt similar approaches as regards the mainstreaming of gender and promote a cross-fertilization of experiences. As the CBD is actually at the most developed stage of gender mainstreaming, the method applied by the Secretariat of the CBD could be used as a source of inspiration for the other two Conventions on climate change and desertification.
- **Shared approach at national level among NBSAPs, NAPAs and NAPs.** Due to the fact that all Rio Conventions are dealing at the moment with climate change issues, a harmonization exercise should be carried out at national level in terms of their approach towards climate change and gender (NBSAPs, NAPAs and NAPs) which could contribute to a more systematic approach to mainstreaming gender in the environmental sector. In fact, since some NBSAPs have already taken important steps towards the promotion of gender equality, the design of NAPAs can draw on their experience. Some NAPAs have already started to address some gender elements (Pearl, personal communication). For example:
 - Uganda has included in their criteria equity and gender issues, taking into consideration disadvantaged groups. The NAPA also expresses the need to develop guidelines for mainstreaming gender issues.
 - Burundi's Adaptation Plan mentions as one of its objectives women's empowerment.
 - The Democratic Republic of Congo and Guinea documents recognize women's role in water, agriculture, community development and their vulnerability.
 - Bhutan and Malawi include references to gender which are related to fulfilment of the MDGs and women's participation.

- **Coherence between NAPAs and other national legal tools dealing with gender equality.** In democratic countries gender equality is one of the main legal principles of the national legal system. In many cases, the commitment of countries to gender equality is expressed and guaranteed by a series of instruments; such as, the constitution, international agreements the countries are parties to, the so-called “Equal Treatment Acts”, and other national regulations. Thus, the mainstreaming of gender in NAPAs will contribute to the coherence of the national legal system and ensure that the national adaptation programmes are not discriminatory in violation of other national and international legal tools affirming gender equality.

As a final remark it is important to highlight the fact that since the UNFCCC was drawn up within the framework of the United Nations, decisions of the General Assembly and conventions or treaties dealing with gender issues constitute mandates.

Further resources

Aguilar, L. et al. (2008). *CBD Gender Plan of Action*. UNEP/CBD/COP/9/INF/12/R. May 23, 2008.

Quesada-Aguilar, A. and Mata, G. (2008). *Gender and National Biodiversity Strategies and Action Plans (NBSAPs)*. Fact sheet. IUCN-CBD.

Knabe, F. and Poulsen, L. (2004). *How the UN Convention to Combat Desertification and Drought Has Promoted the Role of Women in Decision-Making*. Switzerland: IUCN.

Lambrou, Y. and Laub, R. (2004). *Gender Perspective on the Conventions on Biodiversity, Climate Change and Desertification*. Italy: Natural Resource Management and Environment Department, FAO.

Notes for the facilitator:

It is fundamental that the facilitator becomes familiarized with all the legal instruments described in this section prior to conducting training on this module. It may also be helpful to familiarize yourself with the national and regional agreements and laws applicable to the countries which participants represent.

64

In addition to the legal aspects there are other elements that can be used for “arguing your case” in relation to the importance of gender in climate change initiatives, programmes or policies.

The added value of undertaking gender mainstreaming falls under three categories: justice and equality; accountability and responsibility; and efficiency and sustainability. These categories give a sense of the placement of gender mainstreaming within the development context, and offer arguments for pursuing gender equality.

Justice and equality

- If we are to pursue democratic principles and basic human rights, which are values that demand gender equality, we must also pursue gender mainstreaming.
- Equal representation and participation of both genders is a matter of justice.
- The vast majority of state parties to the UNFCCC are signatories to a variety of normative agreements calling for gender mainstreaming and gender equality.

Accountability and responsibility

- Gender mainstreaming is often a prerequisite for forging formal alliances or partnerships with donors or other institutions.
- Given that women and men each make up half the world's population, any initiative that does not recognize and address both genders equally will be ultimately flawed.
- Accountability to gender resolutions within the UN system.
- Social responsibility to pursue basic tenets of social justice, poverty reduction and sustainable development.

Efficiency and sustainability

- Innumerable studies have proven the irrefutable fact that equal inclusion of women and men in all aspects of sustainable development pays off.
- Incorporating a gender approach promotes programme and institutional efficiency through improved targeting and a more nuanced understanding of the population involved.
- Studies have found that gender inequality harms long-term growth (World Bank) and that there is a clear correlation between gender equality and GDP per capita (World Economic Forum).

65

Assignments for this module:

Activity	Procedure	Time
Getting to know the legal framework in relation to gender and climate change	Prepare a presentation with the principal trends in the topics of human rights, sustainable development, gender equality and disasters. Use Table 1 included in this module	30 minutes
	Once the presentation is concluded allow time for the participants to discuss the implication of the legal framework	10 minutes
In-depth analysis of some legal mandates and their implication for international and national policies and decision-making processes related to climate change	Technique “How binding are the legal instruments and how do they implicate the UNFCCC?”	1 hr 15 minutes

Table 1. Summary of the major legal instruments

HUMAN RIGHTS

UN Human Rights Council

Main inputs

At its seventh session in March 2008, the UN Human Rights Council adopted by consensus a resolution on Human Rights and Climate Change, in which the concern was expressed that climate change poses an immediate and far-reaching threat to people and communities around the world and has implications for the full realization of human rights. The Office of the High Commissioner was encouraged to carry out an analytical study of the relationship between climate change and human rights.

UN Declaration on the Rights of Indigenous Peoples

Main inputs

In September 2007, after more than 20 years of negotiation, the United Nations Declaration on the Rights of Indigenous Peoples (DECRIPS) was finally adopted.

Specific text

DECRIPS specifically prohibits discrimination against women (Article 22.2), providing that all the rights and freedoms recognized in the declaration be guaranteed equally to male and female indigenous people (Article 44). This sets a standard which should inform the implementation of the Declaration.

Article 18 states that “indigenous peoples have the right to participate in decision making in matters which would affect their rights, through representatives chosen by themselves in accordance with their own procedures...”

Article 32 reiterates, “indigenous peoples have the right to determine and develop priorities and strategies for the development or use of their lands or territories and other resources.”

World Conference on Human Rights

Main inputs

At the 1993 World Conference on Human Rights in Vienna, 171 states adopted the Vienna Declaration and Programme of Action.

Specific text

Article 11 of the Declaration states, “The right to development should be fulfilled so as to meet equitably the developmental and environmental needs of present and future generations.” The outcome documents urge treaty monitoring bodies to include the status of women and the human rights of women in their deliberations and findings, making use of gender-specific data. It also urges governments and regional and international organizations to facilitate the access of women to decision-making processes.

Convention on the Elimination of all forms of Discrimination Against Women (CEDAW)

Main inputs

Convention on the Elimination of all forms of Discrimination Against Women (CEDAW) was adopted in 1979 by the General Assembly of the

Main inputs

United Nations (UN).³⁹ An Optional Protocol to CEDAW, adopted by the United Nations General Assembly in December 1999, came into effect December 22, 2000.⁴⁰ The Optional Protocol establishes procedures whereby women may file complaints requesting investigation of violations of rights.

CEDAW, commonly referred to as a bill of rights for women, seeks to promote adoption of measures to secure elimination of different forms (and levels) of discrimination against women.

Specific text

CEDAW defines discrimination against women as: “any distinction, exclusion or restriction made on the basis of sex which has the effect or purpose of impairing or nullifying the recognition, enjoyment or exercise by women, irrespective of their marital status, on a basis of equality of men and women, of human rights and fundamental freedoms in the political, economic, social, cultural, civil or any other field” (Article 1).

Article 8

States Parties shall take all appropriate measures to ensure to women, on equal terms with men and without any discrimination, the opportunity to represent their Governments at the international level and to participate in the work of international organizations.

Article 13

States Parties shall take all appropriate measures to eliminate discrimination against women in other areas of economic and social life in order to ensure, on a basis of equality of men and women, the same rights, in particular:

- (b) The right to bank loans, mortgages and other forms of financial credit;

Article 14

1. States Parties shall take into account the particular problems faced by rural women and the significant roles which rural women play in the economic survival of their families, including their work in the non-monetized sectors of the economy, and shall take all appropriate measures to ensure the application of the provisions of the present Convention to women in rural areas.
2. States Parties shall take all appropriate measures to eliminate discrimination against women in rural areas in order to ensure, on a basis of equality of men and women, that they participate in and benefit from rural development and, in particular, shall ensure to such women the right:
 - (a) To participate in the elaboration and implementation of development planning at all levels;
 - (d) To obtain all types of training and education, formal and non-formal, including that relating to functional literacy, as well as, *inter alia*, the benefit of all community and extension services, in order to increase their technical proficiency;
 - (f) To participate in all community activities;
 - (g) To have access to agricultural credit and loans, marketing facilities, appropriate technology and equal treatment in land and agrarian reform as well as in land resettlement schemes.

³⁹ As of September 2007 CEDAW had been ratified by 185 countries (ratifications, accessions and successions): <http://www.ohchr.org/english/law/cedaw.htm>.

⁴⁰ As of September 2007, 90 countries had ratified the Optional Protocol to CEDAW.

GENDER EQUALITY

52nd Session of the Commission on the Status of Women

Main inputs

The 52nd session of the Commission on the Status of Women (2008) has identified gender perspectives on climate change as its key emerging issue.

Specific text

Resolution 21(jj) on Financing for Gender Equality and the Empowerment of Women (E/CN.6/2008/L.8): governments are urged to integrate: “a gender perspective in the design, implementation, monitoring and evaluation, and reporting of national environmental policies, strengthen mechanisms and provide adequate resources to ensure women’s full and equal participation in decision making at all levels on environmental issues, in particular on strategies related to climate change and the lives of women and girls.”

United Nations Economic and Social Council (ECOSOC) Resolution 2005/31

Main inputs

At its 39th plenary meeting in July 2005, the United Nations Economic and Social Council (ECOSOC) adopted the resolution “Mainstreaming a Gender Perspective Into All Policies and Programmes in the United Nations System.”

Specific text

The ECOSOC resolution calls upon “all entities of the United Nations system, including United Nations agencies, funds and programmes, to intensify efforts to address the challenges involving the integration of gender perspectives into policies and programmes, including:

- Developing action plans with clear guidelines on the practical implementation of gender mainstreaming;
- Fully incorporating a gender perspective into programme budgets;
- Ensuring continuous awareness raising and training on gender issues for all staff;
- Requiring gender analysis for both policy formulation and programmatic work;
- Ensuring commitment by senior management to gender mainstreaming;
- Strengthening accountability systems for gender mainstreaming;
- Incorporating a gender perspective into operational mechanisms, such as those relating to the implementation of Millennium Development Goals;
- Continuing to support governments and to work with civil society in their efforts to implement the Beijing Platform for Action;
- Development and institutionalization of monitoring and evaluation tools and gender impact analysis methodologies, promoting the collection, compilation and analysis of sex-disaggregated data; and
- Promoting mainstreaming of gender perspectives into key macro-economic and social development policies and national development programmes.”

Beijing Declaration and Platform for Action

Main inputs

Two documents emanated from the IV World Conference on Women: the Beijing Declaration and Platform for Action. These documents establish a strategy and responsibilities for State Parties. The Platform for Action warns that: “the human rights of women, as defined by international human rights instruments, will only be dead words unless they are fully recognized, protected, applied, and effectively enforced, at national legal and practical levels...” (Paragraph 218).

Specific text

Strategic objective K.1

Involve women actively in environmental decision-making at all levels.

Strategic objective K.2

Integrate gender concerns and perspectives in policies and programmes for sustainable development.

Strategic objective K.3

Strengthen or establish mechanisms at the national, regional and international levels to assess the impact of development and environmental policies on women.

SUSTAINABLE DEVELOPMENT AND ENVIRONMENT

Agenda 21

Main inputs

Agenda 21 establishes a blueprint for sustainable development. It was adopted at the United Nations Conference on Environment and Development, in Rio de Janeiro in 1992.

Agenda 21 is to be achieved through government policies, national guidelines, and plans to secure equity in all aspects of society, including women's key involvement in decision making and environmental management.

Specific text

Chapter 24, entitled “Global Action for Women towards Sustainable Development,” calls upon governments to make the necessary constitutional, legal, administrative, cultural, social and economic changes in order to eliminate all obstacles to women's full involvement in sustainable development and in public life.

Agenda 21 recognizes the importance of the knowledge and traditional practices of women, and underscores the contribution women have made to biodiversity conservation (Section 24.2 (c)). Agenda 21 calls for the adoption of measures to translate its objectives into clear strategies (Section 24(f)).

In the rest of the text, women are specifically mentioned in 159 cases.

WSSD Plan of Implementation

Main inputs

The World Summit on Sustainable Development (WSSD) Plan of Implementation 2002, adopted in Johannesburg, promotes women's equal access to and full participation in decision making at all levels, on the basis of equality with men.

Specific text

It calls for mainstreaming gender perspectives in all policies and strategies, the elimination of all forms of discrimination against women and the improvement of the status, health and economic welfare of women and girls through full and equal access to economic opportunities, land, credit, education and health-care services.

Millennium Declaration and the Millennium Development Goals

Main inputs

At the 8th plenary session of the UN General Assembly in September 2000, countries adopted the Millennium Declaration, committing themselves to respecting the equal rights of all without distinction as to race, sex, language or religion. The UN also adopted the Millennium Development Goals (MDGs), which are referred as a blueprint for the realization of the Millennium Declaration.

Specific text

The Declaration identifies certain fundamental values as being essential to international relations in the twenty-first century. Signatories commit to:

- Assuring equal rights and opportunities for women and men (Article 6).
- Promoting gender equality and the empowerment of women as effective ways to combat poverty, hunger and disease, and to stimulate development that is truly sustainable (Article 20).
- Ensuring that the benefits of new technologies, especially information and communication technologies...are available to all (Article 20).

UN Convention to Combat Desertification

Main inputs

On June 17, 1994, the Convention was open for signature by national governments; implementation began in 1996.

Of the so-called Rio Conventions, the Convention to Combat Desertification (UNCCD, 1994) most clearly recognizes the role of women in rural livelihoods and encourages the full participation of women and men in the implementation of the convention.

The UNCCD stresses the important role played by women in regions affected by desertification and/or drought, and instructs national action programmes to provide for effective participation of women and men, particularly resource users, including farmers and pastoralists and their organizations.

Specific text

Prologue: Stressing the important role played by women in regions affected by desertification and/or drought, particularly in rural areas of developing countries, and the importance of ensuring the full participation of both men and women at all levels in programmes to combat desertification and mitigate the effects of drought;

PART II: General Provisions

Article 5: Obligations of affected country Parties

- (d) Promote awareness and facilitate the participation of local populations, particularly women and youth, with the support of

Specific text

non-governmental organizations, in efforts to combat desertification and mitigate the effects of drought;

PART III: Action Programmes, Scientific and Technical Cooperation and Supporting Measures

Section 1: Action programmes Article 10: National action programmes

2. National action programmes shall specify the respective roles of government, local communities and land users and the resources available and needed. They shall, *inter alia*: (f) provide for effective participation at the local, national and regional levels of non-governmental organizations and local populations, both women and men, particularly resource users, including farmers and pastoralists and their representative organizations, in policy planning, decision making, and implementation and review of national action programmes;

Section 3: Supporting measures

Article 19: Capacity building, education and public awareness

1. The Parties recognize the significance of capacity building – that is to say, institution building, training and development of relevant local and national capacities – in efforts to combat desertification and mitigate the effects of drought. They shall promote, as appropriate, capacity building:
 - (a) Through the full participation at all levels of local people, particularly at the local level, especially women and youth, with the cooperation of non-governmental and local organizations;
3. The Parties shall cooperate with each other and through competent intergovernmental organizations, as well as with non-governmental organizations, in undertaking and supporting public awareness and educational programmes in both affected and, where relevant, unaffected country Parties to promote understanding of the causes and effects of desertification and drought and of the importance of meeting the objective of this Convention. To that end, they shall: (e) Assess educational needs in affected areas, elaborate appropriate school curricula and expand, as needed, educational and adult literacy programmes and opportunities for all, in particular for girls and women, on the identification, conservation and sustainable use and management of the natural resources of affected areas.

ANNEX I: Regional Implementation for Africa

Article 8: Content of national action programmes

2. National action programmes shall, as appropriate, include the following general features: (c) The increase in participation of local population and communities, including women, farmers and pastoralists, and delegation to them of more responsibility for management.

Convention on Biological Diversity

Main inputs

The 1992 Convention on Biological Diversity (CBD) recognizes the role of women in the conservation and sustainable use of biological diversity and affirms the need for the full participation of women at all levels

Main inputs

of policy making and implementation. However, only recently have steps been taken to ensure gender mainstreaming in the convention's implementation.

Since 2007, a more focused approach to gender mainstreaming has been undertaken – the CBD Secretariat has appointed a Gender Focal Point and a new Gender Plan of Action has been elaborated.

Specific text

The Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) mentions women's practices, knowledge, and gender roles in food production, as do various decisions of the Conference of the Parties, including:

- (a) **SBSTTA recommendation II/7**, on agricultural biological diversity and the role of women in managing practices and knowledge;
- (b) **COP decision III/11, para.17**, on promotion of women's knowledge and practices in the conservation and sustainable use of biological diversity in the agricultural sector;
- (c) **The annex to COP decision III/14 on Article 8(j)**: gender balance in workshop organization;
- (d) **Annex I to SBSTTA recommendation IV/7**, on potential impacts of tourism on cultural values, including gender;
- (e) **SBSTTA recommendation V/14**, para. 2 (i) and annex III to COP decision VIII/10, on gender balance in the composition of ad hoc technical expert groups, the subsidiary body and roster of experts;
- (f) **COP decision V/16** – element 1 of the programme of work of Article 8(j) on promotion of gender-specific ways in which to document and preserve women's knowledge of biological diversity;
- (g) **COP decision V/20**, on gender balance in the roster of experts;
- (h) **COP decision V/25**, on socio-economic and cultural impacts of tourism: the fact that tourism activities may affect gender relationships (through employment opportunities for example); and
- (i) **Annexes I and II to COP decision VI/10**, annex to COP decision VII/1: Gender as a social factor that may affect traditional knowledge.

Decision V/16: Article 8(j) and related provisions states: "Recognizing the vital role that women play in the conservation and sustainable use of biodiversity, and emphasizing that greater attention should be given to strengthening this role and the participation of women of indigenous and local communities in the programme of work."

Under "General Principles," the Programme of Work on the implementation of Article 8(j) and related provisions of the CBD calls for: "Full and effective participation of women of indigenous and local communities in all activities of the programme of work." Task 4 of the programme of work calls on Parties to develop, as appropriate, mechanisms for promoting the full and effective participation of indigenous and local communities with specific provisions for the full, active and effective participation of women in all elements of the programme of work, taking into account the need to: (a) Build on the basis of their knowledge; (b) Strengthen their access to biological diversity; (c) Strengthen their capacity on matters pertaining to the conservation, maintenance and protection of biological diversity; (d) Promote the exchange of experiences and knowledge; (e) Promote

Specific text

culturally appropriate and gender specific ways in which to document and preserve women's knowledge of biological diversity.

At its **second meeting, held in July 2007, the Ad Hoc Open-ended Working Group on the Review of Implementation of the Convention** recommended that the Conference of the Parties at its ninth meeting should urge Parties, in developing, implementing and revising their national biodiversity strategies and action plans to, *inter alia*, promote the mainstreaming of gender considerations (UNEP/CBD/COP/9/4, annex, recommendation 2/1, annex, paragraph 8 (d)).

COP 9: Welcomes the development by the Executive Secretary of the "Gender Plan of Action under the Convention on Biological Diversity," as contained in document UNEP/CBD/COP/9/INF/12, and invites Parties to support the Secretariat's implementation of the plan.

UN Framework Convention on Climate Change

Main inputs

The UN Framework Convention on Climate Change (UNFCCC) fails to recognize the gender aspects of climate change and omits the issues of gender equality and women's participation entirely. Also, its Kyoto Protocol, that outlines reductions in greenhouse gases until 2012, fails to integrate a gender perspective in its operationalization and mechanisms, such as the Clean Development Mechanism.

Women's caucuses since COP-11 in 2005 have strongly lobbied for a gender approach in all these critical areas. At the last COP-13 in Bali, the gender cc – the Women for Climate Justice network of women's organizations and individuals – was established, as well as the Global Gender and Climate Alliance of UN organizations, IUCN and WEDO along with other international organizations.

IUCN has been working with the Secretariat of the UNFCCC; there is a new Gender Focal Point and a series of steps (*i.e.*, sensitization of staff, gender and adaptation efforts) are going to be conducted.

Specific text

Gender equality is a guiding principle in the design of National Adaptation Programmes of Action (NAPAs) and it was advised to include gender expertise in NAPA teams. Many of the national reports submitted by signatory nations to the UNFCCC Secretariat emphasize the vulnerability of women and the importance of gender equality albeit in broad terms.

Most countries include some reference to the MDGs or national commitments to empowering women, but few detail how urgently women are affected by climate change, much less how they might be identified as powerful actors and agents for change.

RISK REDUCTION

Hyogo Framework for Action

Main inputs

It includes the principal mandate in relation to gender equality and empowerment of women in the context of disaster risk reduction and evolved from the World Conference on Disaster Reduction in Kobe, Japan (2005).

Specific text

General considerations

- (d) A gender perspective should be integrated into all disaster risk management policies, plans and decision-making processes, including those related to risk assessment, early warning, information management, and education and training;

ii) Early warning

- (d) Develop early warning systems that are people-centred, in particular systems whose warnings are timely and understandable to those at risk, which take into account the demographic, gender, cultural and livelihood characteristics of the target audiences, including guidance on how to act upon warnings, and that support effective operations by disaster managers and other decision makers.

ii) Education and training

- (m) Ensure equal access to appropriate training and educational opportunities for women and vulnerable constituencies; promote gender and cultural sensitivity training as integral components of education and training for disaster risk reduction.

How binding are the legal instruments and how do they implicate the UNFCCC?



Objective: Introduce some of the most important legal instruments and demonstrate their importance for climate change initiatives and policies at the international and national level.

Materials: Copies of CEDAW, United Nations Economic and Social Council (ECOSOC) Resolution 2005/31, Hyogo Framework for Action and Beijing Platform for Action (point K). With larger groups, other legal instruments could be incorporated into the analysis.
Marker pens and flip charts

Procedure:

1. Divide the participants into four groups and appoint a leader in each group.
2. Assign one legal framework to each group. Give them time to read it.
3. Ask the group to point out what the implications of the legal instrument are to climate change initiatives and policies at the national and international level.
4. Ask the group what specific actions can be taken to fulfil the mandates.
5. Ask each group to present their conclusions. If possible, provide additional ideas for potential actions.
6. Finally, ask the participants what they have learned from the assignment.

Note:

The texts of the legal instruments can be found at:

CEDAW

<http://www.un.org/womenwatch/daw/cedaw/cedaw.htm>

ECOSOC resolution 2005/31

<http://www.unhcr.org/refworld/docid/463b3d652.html>

The Hyogo Framework for Action

<http://www.unisdr.org/wcdr/intergover/official-doc/L-docs/Hyogo-framework-for-action-english.pdf>

Beijing Platform for Action (point K)

<http://www.un.org/womenwatch/daw/beijing/platform/plat1.htm>

United Nations International Strategy for Disaster Reduction. 2007. **Words Into Actions: A Guide for Implementing the Hyogo Framework**. Geneva, Switzerland: United Nations secretariat of the International Strategy for Disaster Reduction. Available on-line: http://www.preventionweb.net/globalplatform/first-session/docs/Background_docs/Words_into_Action.pdf (Accessed on 8 July 2007).

Module 3:

Overview of gender issues and climate change¹

Gender inequalities intersect with climate risks and vulnerabilities. Women's historic disadvantages – their limited access to resources, restricted rights, and a muted voice in shaping decisions – make them highly vulnerable to climate change. The nature of that vulnerability varies widely, cautioning against generalization. But climate change is likely to magnify existing patterns of gender disadvantage (UNDP Human Development Report, 2007).

Key messages

- There is a causal interrelationship between climate change and gender: (1) climate change tends to exacerbate existing gender inequalities; (2) gender inequalities lead women to face larger negative impacts;
- Women are not just victims but active agents of change and possess unique knowledge and skills;
- Understanding the risks and different impacts of climate change on men and women is key in achieving sustainable development and the MDGs.

Climate change will affect all countries, in all parts of the globe. But its impacts will be distributed differently among regions, generations, age classes, income groups, occupations and genders (IPCC, 2001). The poor, the majority of whom are women living in developing countries, will be disproportionately affected. Yet most of the debate on climate so far has been gender-blind.

Because climate change affects women and men differently, a gender equality perspective is essential when discussing policy development, decision making, and strategies for mitigation and adaptation. Women are not just helpless victims – they are **powerful agents of change**, and their leadership is critical. Women can help or hinder strategies related to energy use, deforestation, population, economic growth, science and technology, and policy making, among other things.

¹ The discussion on gender and climate change draws heavily upon: Aguilar, L. [In press]. *Climate Connection. Women and Climate Change: Vulnerabilities and Adaptive Capacities*. State of the World.

Climate change and gender inequalities are inextricably linked. By exacerbating inequality overall, climate change slows progress toward gender equality and thus impedes efforts to achieve wider goals like poverty reduction and sustainable development. Gender inequality can worsen the impacts of climate change (see Box 1); meanwhile, taking steps to narrow the gender gap and empower women can help reduce these impacts.

Box 1 Gender inequality and climate change

In some communities in Bangladesh, women are deprived of the capacity to cope with disasters by being kept in dependent positions in terms of accessing information from the world outside the bari, and by being denied the right to take major decisions. In this respect, *pardah*² as an institution which prevents women from engaging in socio-economic roles outside the household directly prescribes women's vulnerability to disaster.

Source: Ikeda, 1995.

3.1 Causes of vulnerability, or specific conditions that make women, especially poor women, vulnerable to climate change

Vulnerability is a reflection of the state of the individual and collective physical, social, economic and environmental conditions at hand. These individual and collective conditions are shaped by many factors, among which gender plays a key role. Gender-based vulnerability does not derive from a single factor, but reflects historically and culturally specific patterns of relations in social institutions, culture, and personal lives (Enarson, 1998). Gender relations will shape the above-mentioned four conditions of vulnerability. The intersection of these factors with caste, racial and other inequalities, creates hazardous social conditions that place different groups of women at risk (Enarson, 1998).

However, there is a need to avoid being simplistic and just seeing women (because of their sex) as **victims**. Women are not vulnerable because they are “naturally weaker”: women and men face different vulnerabilities due to their different social roles. For example, many women live in conditions of social exclusion. This is expressed in facts as simple as differentials in the capacity to run or swim, or constraints on their mobility, and behavioural restrictions, that hinder their ability to re-locate without their husband's, father's or brother's consent.

² *Purdah* - a norm that prescribes spatial movement, behaviour and attitudes of women.

It has also been found that the vulnerability and capacity of a social group to adapt or change depends greatly on their assets. Next to their physical location, women's assets such as resources and land, knowledge, technology, power, decision-making potential, education, health care and food have been identified as determinant factors of vulnerability and adaptive capacity. As pointed out by Moser and Satterthwaite (2008), the more assets people have, the less vulnerable they are and the greater the erosion of people's assets, the greater their insecurity. Data from around the world indicates that women tend to have less or limited access to assets (physical, financial, human, social and natural capital).³

Box 2 Gender and assets

Gender inequalities exist in the access to valuable resources such as land, credit, agricultural inputs, technology, and extension and training services that would enhance their capacity to adapt. In Liberia, women produce 60% of food crops despite their lack of access to farmland, low level of technological training and knowledge, and lack of financial assistance (Liberia NBSAP, 2004). An analysis of credit schemes in five African countries found that women received less than 10% of the credit awarded to male smallholders (FAO, 2008). Fewer than 10% of women farmers in India, Nepal and Thailand own land (*idem*). In Kenya, although their statutory laws do not prevent them from owning land, in practice women still face numerous difficulties in trying to own land (Kenya NBSAP, 2000).

Source: Quesada-Aguilar and Mata (2008). *Gender and National Biodiversity Strategies and Action Plans (NBSAPs)*. Fact sheet IUCN-CBD.

Women's assets largely determine how they will be affected by and respond to the impacts of climate change. Therefore, actions should be taken to build up the asset base of women as a fundamental principle in adaptation strategies.

3.2 Added risk in securing wellbeing

Climate change can have disproportionate impacts on women's wellbeing compared to men. Through both direct and indirect risks, it can affect their livelihood opportunities, the time they have available to them on a daily basis, and overall life expectancy (see Table 1). In addition to exacerbating existing risks, climate change can reveal new risks that have been hidden.

³ Differentiated data on access of women and men to assets can be found in various institutions within the UN system: the United Nations Development Programme (UNDP) Gender-related Development Index (GDI); the UN Development Fund for Women (UNIFEM); the UN International Research and Training Institute for the Advancement of Women (INSTRAW); the UN Food and Agriculture Organization (FAO); and the International Fund for Agricultural Development (IFAD).

Table 1. Direct and indirect risks of climate change and their potential effect on women

Climate change effects	Potential risks	Examples	Potential effect on women
Direct			
	Increased ocean temperatures	Rising incidence of coral bleaching due to thermal stress.	Loss of coral reefs can damage the tourism industry, a sector in which women comprise 46% of the workforce.
	Increased drought and water shortage	Morocco had 10 years of drought from 1984 to 2000; northern Kenya experienced four severe droughts between 1983 and 2001.	Women and girls in developing countries are often the primary collectors, users and managers of water. Decreases in water availability will jeopardize their families' livelihoods and increase their workloads, and may have secondary effects such as lower school enrolment figures for girls or less opportunity for women to engage in income-generating activities.
	Increased extreme weather events	Greater intensity and quantity of cyclones, hurricanes, floods and heat waves.	In a sample of 141 countries over the period 1981–2002, it was found that natural disasters (and their subsequent impact) on average kill more women than men or kill women at an earlier age than men.
Indirect			
	Increased epidemics	Climate variability played a critical role in malaria epidemics in the East African highlands and accounted for an estimated 70% of variation in recent cholera series in Bangladesh.	Women have less access to medical services than men, and their workloads increase when they have to spend more time caring for the sick. Poorer households affected by HIV/AIDS have fewer resources to adapt to climate change impacts. Adopting new strategies for crop production or mobilizing livestock is harder for female-headed and infected households.
	Loss of species	By 2050, climate change could result in species extinctions ranging from 18–35%.	Women often rely on crop diversity to accommodate climatic variability, but permanent temperature change will reduce agro-biodiversity and traditional medicine options, creating potential impacts on food security and health.

Decreased crop
production

In Africa, crop
production is
expected to decline
20–50% in
response to extreme
El Niño-like
conditions.

Rural women in particular are responsible
for half of the world's food production and
produce between 60–80% of the food
in most developing countries. In Africa,
the share of women affected by climate-
related crop changes could range from
48% in Burkina Faso to 73% in the
Congo.

Source: See Bibliography.

An increase in climate-related disease outbreaks, for example, will have very different impacts on women than on men. Each year, approximately 50 million women living in malaria-endemic countries throughout the world become pregnant, of whom over half live in tropical areas of Africa with intense transmission of *Plasmodium falciparum*. An estimated 10,000 of these women and 200,000 of their infants die as a result of malaria infection during pregnancy, and severe malarial anaemia contributes to more than half of these deaths (WHO, 2008).

A 2007 study by the London School of Economics, the University of Essex and the Max-Planck Institute of Economics analyzed disaster events in 141 countries and found that when women's economic and social rights are not protected, more women than men die from disasters. In societies where both genders enjoy equal rights, disasters kill similar numbers of women and men (Neumayer and Plümper, 2007).

Hence interventions related to risk reduction and social risk management should pay especial attention to the need to enhance the capacity of women to manage climate change risks with a view to reducing their vulnerability and maintaining or increasing their opportunities for development. Some possible actions are:

- To improve access to skills, education and knowledge;
- To improve disaster preparedness and management;
- To support women in developing a voice and political capital to demand access to risk management instruments; and
- To develop policies to help households to stabilize consumption (credit, access to markets, social security mechanisms).

3.3 Gender equality, climate change and the Millennium Development Goals (MDGs): what is the link?

Gender equality is the focus of the third MDG and a prerequisite to fulfilment of all the MDGs (Kabeer, 2003). The manner in which climate change magnifies existing gender inequalities will significantly hamper efforts to achieve these goals. Developing countries are addressing swift environmental changes that block progress on poverty reduction and sustainable development goals, and gender inequality further entrenches these countries in poverty and underdevelopment. In a similar manner, the MDGs are interdependent and reinforce each other (see Table 2).

Climate change is a global security and human rights issue. It represents a serious challenge to sustainable development, social justice, equity and respect for human rights, also for future generations. Gender is a central factor in the juxtaposition of these issues.

Table 2. Establishing the linkages between MDGs, climate change and gender

Millennium Development Goals	Threats due to climate change	Gender implications
MDG 1: Eradicate extreme poverty and hunger	Reduction of agricultural production for survival and commercial ends Food security at risk	<p>Women make up the majority of the world's poor – of the 1.3 billion poor worldwide, 70% are women.</p> <p>Loss or reduction of domestic species of plants and animals used by women to ensure food security of their families. Atmospheric brown clouds (ABC) due to aerosol loads and greenhouse gas (GHG) concentrations have reduced historical rice harvests (Cramer, 2006). Rice is the major caloric intake of developing countries. Women are already more vulnerable to nutritional problems (for example, 50% of the women and children in developing countries are anaemic) due to physical, social, economic, gender and cultural issues (e.g., pregnancy, lactation, inequitable food distribution within families).</p> <p>Reduction or extinction of marine species used by women for household consumption or for productive activities.</p> <p>In some cases, the trade-offs between consumption and survival can exacerbate gender bias in nutrition. Research in India has found that girls' nutrition suffers most during periods of low consumption and rising food prices, and that rainfall shortages are more strongly associated with deaths among girls than boys (UNDP, 2007).</p>

MDG 2:
Achieve universal
primary education

Increases the
workload needed
for agricultural
production and
subsistence
activities

Environmental
changes are likely to
drive migration

Less access to safe
water

Generally, girls and women are responsible for the collection of water and fuelwood. In the poorest areas of the world, particularly sub-Saharan Africa, women and girls can spend 3–4 hours per day on these tasks. Flooding, drought and desertification can extend these burdens geographically, forcing more girls in more communities to forego education. Of the 115 million children of the world who do not go to school, three-fifths are girls, and women constitute 75% of the world's illiterate population (Oxfam, 2007).

According to UNHCR, 80% of refugees in the world are women and children. Migration of populations, given extreme changes and disasters, could interrupt and limit the opportunities for education.

Men are more likely to migrate, either seasonally or for a number of years. Female-headed households left behind are often the poorest. The workloads of these women, their children and the elderly increase significantly as a result of male emigration.

MDG 3:
Promote gender
equality and empower
women

Increases deaths and
injuries where
inequality exists

Exacerbates existing
gender inequalities

Inhibits political,
economic and social
empowerment

A 2007 study of 141 natural disasters by the London School of Economics, the University of Essex, the Max-Planck Institute of Economics, found that when economic and social rights are fulfilled for both sexes, the same number of women and men die in disasters. On the contrary, when women do not enjoy economic and social rights equal to men, more women than men die in disasters. This gender discrepancy has come to light in a range of major disasters, including Hurricane Mitch, Hurricane Katrina, and other storms in the Americas; European heat waves; and cyclones in South Asia.

In some Latin American countries, due to the social behaviour assigned to men, in disaster situations, men tend to take extreme risks during natural events under what is called the “superman syndrome.” This has caused unnecessary deaths, *i.e.*, crossing rivers with strong currents.

When swift environmental changes arise, existing inequalities are magnified and traditional gender roles are reinforced. Historic disadvantages, including restricted access to land, resources, information, and decision making, result in heavier burdens for women during and after natural disasters.

MDG 3: (cont.)		<p>Women in developing countries are still largely responsible for securing food, water and energy for cooking and heating. Drought, desertification, and erratic rainfall result in women having to work even harder to secure these resources, leaving them with less time to earn income, get an education, or provide care to their families.</p> <p>Lack of representatives and women's participation in the decision-making spheres related to climate change at all levels (local, national and international) result in the absence of gender-responsive policies and programmes.</p>
MDG 4: Reduce child mortality	Environmental effects can aggravate the risk of contracting serious illnesses	<p>Increase in women's workload due to their role as primary carers in the family. <i>i.e.</i>, time spent on caring for children and the sick.</p> <p>Loss of medicinal plants used by women.</p>
MDG 5: Improve maternal health	Increased prevalence of some vector-borne diseases	<p>Women and children are fourteen times more likely to die than men during a disaster (Peterson, 2007).</p> <p>The high mortality rates of mothers/women/spouses during disasters result in an increase in: the numbers of orphans and mortality rates; early marriages for young girls (new spouses) causing them to drop out of school; trafficking and prostitution which in turn increase exposure to HIV/AIDS (Oxfam, 2005).</p>
MDG 6: Combat HIV/AIDS, malaria and other diseases	Increase in temperatures (heat waves)	Migration enhances the risk of getting HIV/AIDS, given that families are separated and they are forced to live in overpopulated spaces.
MDG 7: Ensure environmental sustainability	<p>Extinction of species, changes in species composition, disruption of symbiotic relationships, changes in trophic cascades, among others</p> <p>Changes in the quantity and quality of natural resources could reduce the productivity of ecosystems</p>	<p>Without secure access to and control over natural resources (land, water, livestock, trees), women are less likely to be able to cope with climate change impacts.</p> <p>Adaptation measures, related to anti-desertification, are often labour-intensive and women often face increasing expectations to contribute unpaid household and community labour to soil and water conservation efforts.</p> <p>Decrease in forest resources used by women. Rural women in developing countries collect forest products and used them as fuel, food, medicines or food for their animals. The reduction or disappearance of these products will have a negative impact on the wellbeing and quality of life for them and their families.</p>

MDG 7: (cont.)	Floods, droughts, rising sea levels, melting of glaciers and polar icecaps	Women often rely on a range of crop varieties (agro-biodiversity) to accommodate climatic variability, but permanent temperature change will reduce agro-biodiversity and traditional medicine options.
MDG 8: Develop a Global partnership for development	<p>Climate change increases the challenge of fulfilling the MDGs</p> <p>It is necessary to increase financial resources for adaptation and mitigation efforts</p>	<p>Incorporate a gender perspective into technology transfer, programmes and projects for generating capacities for mitigation and adaptation.</p> <p>Promote, facilitate, develop and implement education and training programmes focused on climate change, targeting women in particular.</p> <p>Facilitate public access to data and information, by providing the information on climate change initiatives, policies and results of actions that are needed by women to understand, address and respond to climate change, taking into account local and national circumstances such as quality of internet access, literacy and language issues.</p> <p>Promote women's participation in addressing climate change and its effects and in developing adequate responses, by facilitating feedback, debate and partnership in climate change activities and governance.</p> <p>The distribution of financial resources available for mitigation and adaptation must be allocated on the basis of gender equality principles.</p>

Source: Aguilar *et al.*, 2007.

Further resources

Enarson, E. (1998). "Through Women's Eyes: A Gendered Research Agenda for Disaster Social Science". *Disasters* 22(2): 157–173.

Lambrou, Y. and Piana, G. (2006). *Gender: The missing component of the response to climate change*. Italy: FAO.

Masika, R. (Ed.) (2002). *Gender, Development and Climate Change*. UK: Oxfam.

Nelson, V., Meadows, K., Cannon, T., Morton, J. and Martin, A. (2002). "Uncertain Predictions, Invisible Impacts, and the Need to Mainstream Gender in Climate Change Adaptations". *Gender & Development* 10(2).

Neumayer, E. and Plümpner, T. (2007). "The Gendered Nature of Natural Disasters: The Impact of Catastrophic Events on the Gender Gap in Life Expectancy, 1981–2002". *Annals of the Association of American Geographers* 97(3): 551–566.

WEDO, ABANTU, ActionAid and ENDA. (2008). *Gender, Climate Change and Human Security Lessons from Bangladesh, Ghana and Senegal*. Report for the Hellenic Foundation for European and Foreign Policy (ELIAMEP).

Assignments for this module:

Activity	Procedure	Time
Understanding the basic linkages between gender and climate change	With the information provided in the module, develop a presentation pointing out the issues of vulnerabilities and assets and women as agents of change	15 minutes
	Present the video from Oxfam: http://www.youtube.com/watch?v=iSMB8m4_4BM&eurl=http://www.newscientist.com/blog/environment/2008/06/is-climate-change-feminist-issue.html?DCMP=ILC-rhts&nsref=ts12_he	10 minutes
	Ask participants to identify the central themes in the video and to brainstorm some potential solutions	15 minutes
	Divide the group in two and apply the technique “Does climate change have differentiated impacts?”	50 minutes

Case studies

Case study 1 The Mama Watoto Group

The Mama Watoto Group has been running an afforestation project since 1994, which has benefited the conservation of biodiversity in the region, prevented soil erosion and improved soil fertility. The main goals of the project were to provide a solution to the scarcity of firewood and to create sustainable livelihoods for the community. However, as the project has evolved, empowering women with education about the environment, and giving them the skills to diversify their livelihoods in an environmentally conscious way have led to significant success in effecting change. Diversifying women's sources of income, and afforestation of the region, will help mitigate the future threat of climate change with its weather-related hazards such as flooding, landslides and drought. The initiative also contributes to climate change mitigation through reforestation efforts.

The Mama Watoto Women's group in Kenya was formed in 1990 to address the scarcity of fuelwood and the poverty of rural women. It comprises 28 women and their families (a total of 150 people) in the Kakamega Region in western Kenya. Kakamega is about 30 km north of the Equator, with very high annual precipitation.

Firewood was the communities' main energy source. As it grew scarce, women were forced to collect wood illegally from the reserve that borders the community, the Kakamega National Forest Reserve, exposing themselves to legal action, fines and imprisonment. Since the establishment of the group, the women grow fast-maturing trees for firewood and timber in "women-made forests" in sections within their families' or their own farms. The afforestation programme has improved soil fertility, reduced illegal harvesting, and increased the vegetation cover in the Kambiri region, thereby increasing carbon sequestration (FAO, 1994).

The group has ensured that families who were previously being prosecuted for destroying the forest, are now sustainably using available resources. The group has expanded the harvesting, processing and packaging of honey which has improved household incomes. Cultivation of soya beans is also raising household incomes, facilitated by a collective storage unit built by the group. Additionally, the group has introduced fish farming, and sustainable harvesting of herbs and medicinal plants. Overexploitation of forest resources has significantly reduced since community members have diversified their farmed products.

The group works to counteract threats to existing biodiversity through education. The group also cares for orphans and runs a home based for people living with HIV/AIDS.

All group activities are driven by community needs and the structure of the organization encourages inter-generational participation, which helps maintain the sustainability of the project. Also, the group works very closely with research and government institutions. Partners in this initiative include: the Shanderema Self-Help Group (orphans); Ivakale Focal Area Group and Musembeli Women's Group (orphans); Lugusi Post Test Group (home-based HIV/AIDS care); Kenya Wildlife Service-Buyangu Camp (protection of forest resources); GROOTS Kenya (peer learning and exchange); Jamii Network Group, Ivakale Bidii Self-Help Group, Ileho Youth Association, I.I.R.R. (soya bean seeds); and Vihiga District Rotarians (water pump).

Sources:

FAO. (1994). Afforestation initiative Kakamega, Kenya. Retrieved from the World Wide Web: www.fao.org/SARD <<http://www.fao.org/SARD>>

Equator Prize. (2006). Nomination: Mama Watoto Women Group. Retrieved from the World Wide Web: <http://www.equatorinitiative.net/content.lasso?cid=111>

Case study 2

Democratizing knowledge for rural empowerment

The Bolivian Altiplano, or high altitude plains, has a harsh, cold and arid climate for agriculture, where innovative methods are needed for survival.

The InterCooperation Bolivia initiative aimed to support and use traditional knowledge of climate prediction for better decision making in agricultural production and risk management. Gradually, it turned its focus towards strengthening the capabilities of both women and men in rural communities. As a result, local groups of technology suppliers were formed, called *yapuchiris*, who sell their services at market prices to other farmers.

In the Aymara language of the communities surrounding Lake Titicaca in Bolivia, “*yapuchiri*” means “sower,” and refers to local specialist vocational farmers dedicated to agricultural learning. These local experts have strengthened local capabilities in disaster risk management, traditional agriculture and climatic knowledge by consolidating and spreading indigenous knowledge. The collective innovation of the *yapuchiri* system arose from a need for more technical assistance to farmers, and a lack of PROSUKO (Programa de Suka Kollus) funds for more engineers. Intercooperation supported the *yapuchiris* in selling technological and financial services to local farmers.

The PROSUKO’s rural partner is the Unión de Asociaciones Productivas del Altiplano (UNAPA) – a farmers’ organization set up from former beneficiaries of PROSUKO projects, composed of 32 communal associations. UNAPA has a formal membership of 289 families, and provides services to approximately 2,500 families in five provinces of the Department of La Paz in Bolivia. UNAPA provides

financial and non-financial services to its members. Financial services are a credit service through the Bolivian micro-finance system, and a crop insurance service to cope with meteorological risk to agricultural production. Those services were developed with the help of specialized partners such as the PROFIN Foundation, a support programme for micro-financing initiatives in Bolivia.

UNAPA’s non-financial services are provided by *yapuchiris*, that is, farmers with a particular artisanal dedication to agriculture. PROSUKO worked with *yapuchiris* to strengthen their capabilities with the aim of having them work for UNAPA as providers of agricultural research and extension services. With PROSUKO’s facilitation, they designed the UNAPA position on agricultural risk management, and are developing and testing technologies to cope with different risks.

At present, UNAPA has 60 *yapuchiris*, 10 of whom are women. The gender element of the system arose from the need to focus and improve on productive farm work assigned to women. For instance, women are traditionally responsible for the storage of seeds and reproductive materials but not every woman in the community manages this to a high standard. Women *yapuchiris* were storing a very large quantity of potato varieties, grain seeds, and other species, including medicines. Moreover, they researched and knew under which conditions and where to sow every species and variety. They had the knowledge to design strategies for risk management, and assisted other women farmers in doing so. In a majority of cases, women *yapuchiris* not only transferred knowledge, but helped to build up the analytical capabilities of farming women.

Furthermore, female yapuchiris have taken a specific leading role in negotiating long-term market access for local produce. Since market access is another UNAPA service, women yapuchiris have negotiated a long-term potato contract and are developing markets for new products such as *chuno* and *tunta* (processed frozen and dried potato), and Andean grains, such as canawa and quinoa. They are also involved in adaptive risk management, and in monitoring bio-indicators of climate and weather-related hazards.

The initiative started in October 2006 and concluded in July 2008, covering two complete agricultural cycles. In two years, yapuchiris were able to overcome frost damage to potato crops within communities, whereas more than 10 years of scientific research had made no impact at the grassroots level. The first cycle emphasized climate prediction through the observation of local flora and fauna. This allowed for crop planning that was more sensitive to risk. The yield losses were reduced by 30–40% in this first cycle. The second cycle then focused increasingly on the empowerment of women in market participation. That year, yield losses from frost, flooding, drought and hail were also reduced by 80–90%.

This has reduced vulnerability to this harsh area's hydrometeorological hazards, particularly frost, rain and hailstorms, and conversely, extreme heat and dryness, which are predicted to intensify due to climate change. This has also meant the stabilization of market access for local crops. The yapuchiris' increased outreach to communities in the face of climate shifts will prove a significant step in increasing the region's resilience to these changes. The inclusion of women's expertise in the yapuchiri system has been vital for transferring agricultural success into stable livelihoods, through women's traditional skills and roles in crop and seed storage, and in accessing markets.

This experience has been developed in rural Aymara communities around Lake

Titicaca, Department of La Paz. In the provinces of Los Andes, Ingavi and Omasuyos the communities were Pillapi, Pircuta, Caluyo, Cutusuma, Sojata, Chococopa and Coromata. Of those communities, Chococopa specializes in producing quality potato seeds and supplies them to the other communities, which are gaining and consolidating a potato market share with traditional Bolivian cuisine restaurants.

Lessons learned

- Agricultural risk management is a task for both men and women in rural contexts. In environments as harsh as the Bolivian Altiplano, their contributions must be articulated under a risk management framework, not as simply production systems or natural resource management.
- Empowerment can be achieved for women only if they are recognized as knowledge managers – and in some aspects of agricultural production processes, as the only holders of relevant knowledge.
- Horizontal knowledge management is a tool for risk management and disaster prevention. When the research and management agenda is set by local communities (with both men and women contributing), scientists and development organizations are then able to add their efforts to a plan developed and fully supported by the people.
- Agricultural risk management can be a very cheap approach, because it is based upon farmers' capabilities and their own practices. Local innovation can be further developed and speeded up by using an approach centred in decision-making patterns, and by incorporating prior information into research design (farmers usually have plenty of prior information). The world's cheapest agrometeorological forecast service is being implemented right now.

Source:

ISDR. (2008). *Gender perspectives: Integrating Disaster Risk Reduction into Climate Change Adaptation. Good Practices and Lessons Learned*. Switzerland: UN/ISDR.

Case study 3

Highlighting local coping strategies for drought

The CRiSTAL Tool: Community-based risk screening tool – adaptation and livelihoods

The “Community-based Risk Screening Tool – Adaptation and Livelihoods” (CRiSTAL) is a decision support tool. Drawing on the environmental impact assessment model and the Sustainable Livelihoods Framework, CRiSTAL aims to provide a logical, user-friendly process to help users better understand the links between climate-related risks, people’s livelihoods, and project activities.

Between 2004 and 2006, an interdisciplinary team conducted a series of field tests on completed or ongoing natural resource management projects in Bangladesh, Mali, Nicaragua, Tanzania and Sri Lanka.

In the Malian Sahel, the CRiSTAL has shown that rural communities have developed coping strategies for extreme climate events such as droughts. The process has also identified an increase in the disaster risk of heavy rainfall, in line with climate change predictions, for which no traditional coping strategies have yet been developed. CRiSTAL was developed by Intercooperation (the Swiss Foundation for International Development and Cooperation), the International Institute for Sustainable Development, the International Union for Conservation of Nature (IUCN) and the Stockholm Environment Institute, with funds provided by the Swiss Agency for Development Cooperation (SDC).

The CRiSTAL approach also provides a gender-specific vulnerability analysis for different parts of the population, highlighting the specific coping strategies of women, and resulting in clear pointers for how gender-specific measures will need to be incorporated into projects.

The initiative

The analysis in Mali with CRiSTAL, a project planning and management tool, is part of

an overall approach by Intercooperation to strengthen local capacity in climate change and disaster risk reduction work. The tool produces answers about the current climate risks, their impacts at the local level and the current coping strategies of the community. By listing the different hazards occurring in the region and their impact on livelihood resources, the participants learn about climate change and disaster risk reduction’s link to their everyday lives. This approach also provides space for a gender-specific analysis on the differences in vulnerability in the rural population.

The analysis was conducted within the “Programme d’appui aux organisations paysannes pour la valorisation des ressources naturelles,” or the so-called Jèkasy Programme in Mali. The Programme is funded by SDC and is implemented by Intercooperation. Its aim is to contribute to the sustainable development and diversification of natural resources in the regions of Ségou and Sikasso; some complementary activities in local economic development are co-financed by the Liechtenstein Development Service (LED) and the Canton of Vaud.

The criteria for selecting the region were:

- Household economies supported by women’s income, through use of non-timber forest products;
- Social conflicts over access to, and use of, natural resources among pastoralists, farmers and forest gatherers;
- Land degradation and desertification, with pressure on fertile land. In Mali, the analysis was conducted between October and December 2007 as a pilot activity in the region, with possible future activities being planned.

CRiSTAL was applied three times in the Ségou region, in the San community in the east of Mali, as well as once in the region of Sikasso.

The tool was applied so project planners could better understand the vulnerabilities of local livelihoods to climate hazards, especially hydrometeorological extremes. It brings to light the strategies people use to cope with the increasing stresses. It is also of particular use for the communities themselves, in deepening their understanding of the impact of climate change; specifically how it affects and will affect their daily activities and their production strategies.

CRiSTAL provides a space for grassroots stakeholders to be heard. Moreover, it produces a simple but systematic climate and livelihood analysis so participants can get a clearer idea about the current climate change situation and possible threats to their livelihoods. Simultaneously, the analysis makes stakeholders at the national, regional and local level aware about climate change issues.

Women did not have their own workshops during the CRiSTAL process, but particular attention was paid to women's participation, and a female programme officer in charge of the region's work was skilled in addressing sensitive issues. The CRiSTAL analysis highlighted the clear gender-specific distinctions between livelihood activities, with women having a key role in certain agricultural activities, e.g., cooking, collection of dry firewood and shea nuts, and the extraction of shea butter. However, the management of the agricultural land as well as the various activities related to agroforestry parks, are run entirely by male community leaders.

Although from a legal perspective, all natural resources belong to the State, from a local traditional perspective the owners are clearly defined within a community and they are men. Women in the community

generally do not own land and have hardly any rights regarding the management of natural resources, despite often working in the fields. The power of the male landowners over the natural resources means that the poorest groups, in particular women, are doubly excluded – from both the land and its resources – and are thus more vulnerable.

The communities have always struggled against the region's semi-arid conditions. Climate hazards such as droughts, lack of rainfall during the rainy season, and irregular rainfall are a part of daily life. According to the participants, since the severe droughts in the 1970s, the Malian government stated that such events should not be considered an external threat, but need to be integrated into daily life and production strategies.

CRiSTAL was able to highlight women's coping strategies:

- Due to food insecurity in the region, generally caused by drought, women in Mali have always stored their harvest separately from the family. Although most of the women do not own land or trees, certain products are exclusively harvested and collected by women. For example, the collection of shea nuts as well as the extraction of shea butter is exclusively a women's activity. These products are then used during difficult periods when the harvest made at household level is insufficient.
- The selling of firewood, or chickens and goats, are other coping strategies that women use to get through difficult periods.
- Although this remains an exception, it has nonetheless become more common that women in peri-urban areas try to form associations to gain access to land by renting or purchasing plots. Women will even buy land from their husbands for agricultural production, and try to get micro-loans from banks or micro-finance organizations.

- The elaboration and the implementation of local conventions can also facilitate the rights and the access of women to natural resources so that they can manage land plots.

However, the CRiSTAL participatory process of listing 30 years of hazards showed: (a) a more frequent occurrence and an increase in the intensity of climate hazards and (b) new phenomena such as “vents violents” (strong winds) from the Sahara and more heavy rainfall causing floods. In September 2007, floods in several regions of Mali illustrated the local vulnerability to a new phenomenon – no traditional coping strategies for heavy rainfall and floods exist. Besides landslides, other severe consequences were the losses of many crops including a great proportion of the annual harvest.

Lessons learned

- Better collaboration between men and women is needed to deal with climate risks. Sharing the risks of production between all members of the household is a strategy for dealing with climate insecurity.
- The impact of climate change will worsen the exclusion of women involved in agriculture, due to their lack of fertile land. Particular support has to be given to women so that they not only have access to natural resources, but can also make decisions on the management of trees, for example multi-purpose tree species.
- Gender inequity has a negative impact on the management of the land and the agroforestry parks. The clarification of tenure and property rights on the local, but also on the national level will be essential.
- Local communities have some coping strategies; however, they will not prove sufficient should current conditions continue. Additional support by the government and NGOs is needed to protect rural communities.
- As the recent floods have shown, rural communities are vulnerable to new climate hazards. It is therefore increasingly important that disaster risk reduction be embedded at the national, regional and local level.
- In Mali, two different Ministries are responsible for climate change and disaster risk reduction. Supraministerial collaboration and exchange is necessary for guaranteeing coordinated work in areas of overlap. Although gender-specific analyses regarding disaster risk reduction and climate change are essential, the National Adaptation Programme for Action (NAPA) and the National Communication do not fully integrate these aspects into their analyses. Encouraging communication between the people responsible for climate change and disaster risk reduction at the national level is required.

The analysis in Mali is part of Intercooperation's overall approach, and many projects are currently using CRiSTAL as a tool for understanding vulnerability and for checking ongoing coping strategies. CRiSTAL is also being used for adjusting concrete programmes and projects in order to increase livelihood resilience. It is highly recommended to incorporate these kinds of analyses into country programmes and projects.

The CRiSTAL tool can be downloaded from the website: www.iisd.org/security/es/resilience/climate_phase2.asp

Source:

ISDR. (2008). *Gender Perspectives: Integrating Disaster Risk Reduction into Climate Change Adaptation. Good Practices and Lessons Learned*. Switzerland: UN/ISDR.

Does climate change have differentiated impacts?

96



Objective: Understand the different impacts that climate change will have on different groups and regions.

Materials: **Handout 1:** *Direct and indirect risks of climate change and their potential effect on women and* **Handout 2:** *Establishing the linkages between MDGs, climate change and gender,* marker pens and flip charts

Procedure:

1. Divide the participants into two groups.
2. Give Handout 1 to the first group and Handout 2 to the other.

3. Appoint a leader in each group.
4. Ask the leader of the group to read out the statements.
5. Ask the groups to discuss the information given. The following questions could facilitate reflection:
 - Do people have similar or equal conditions in which to address and adapt to climate change?
 - Do they have the same skills and capabilities to confront it?
 - Will the consequences of climate change affect all people equally?
6. Ask each group to present their findings. If possible, provide additional information on the issues and possible solutions.
7. Finally, ask the participants what they have learned from the assignment.

Handout 1. Direct and indirect risks of climate change and their potential effect on women

Climate change effects	Potential risks	Examples	Potential effect on women
Direct			
	Increased ocean temperatures	Rising incidence of coral bleaching due to thermal stress.	Loss of coral reefs can damage the tourism industry, a sector in which women comprise 46% of the workforce.
	Increased drought and water shortage	Morocco had 10 years of drought from 1984 to 2000; northern Kenya experienced four severe droughts between 1983 and 2001.	Women and girls in developing countries are often the primary collectors, users and managers of water. Decreases in water availability will jeopardize their families' livelihoods and increase their workloads, and may have secondary effects such as lower school enrolment figures for girls or less opportunity for women to engage in income-generating activities.
	Increased extreme weather events	Greater intensity and quantity of cyclones, hurricanes, floods and heat waves.	In a sample of 141 countries over the period 1981–2002, it was found that natural disasters (and their subsequent impact) on average kill more women than men or kill women at an earlier age than men.
Indirect			
	Increased epidemics	Climate variability played a critical role in malaria epidemics in the East African highlands and accounted for an estimated 70% of variation in recent cholera series in Bangladesh.	Women have less access to medical services than men, and their workloads increase when they have to spend more time caring for the sick. Poorer households affected by HIV/AIDS have fewer resources to adapt to climate change impacts. Adopting new strategies for crop production or mobilizing livestock is harder for female-headed and infected households.
	Loss of species	By 2050, climate change could result in species extinctions ranging from 18–35%.	Women often rely on crop diversity to accommodate climatic variability, but permanent temperature change will reduce agro-biodiversity and traditional medicine options, creating potential impacts on food security and health.

Decreased crop
production

In Africa, crop
production is
expected to decline
20–50% in
response to extreme
El Niño-like
conditions.

Rural women in particular are responsible
for half of the world's food production and
produce between 60–80% of the food
in most developing countries. In Africa,
the share of women affected by climate-
related crop changes could range from
48% in Burkina Faso to 73% in the
Congo.

Source: See Bibliography.

Handout 2. Establishing the linkages between MDGs, climate change and gender

Millennium Development Goals	Threats due to climate change	Gender implications
MDG 1: Eradicate extreme poverty and hunger	<p>Reduction of agricultural production for survival and commercial ends</p> <p>Food security at risk</p>	<p>Women make up the majority of the world's poor – of the 1.3 billion poor worldwide, 70% are women.</p> <p>Loss or reduction of domestic species of plants and animals used by women to ensure food security of their families. Atmospheric brown clouds (ABC) due to aerosol loads and greenhouse gas (GHG) concentrations have reduced historical rice harvests (Cramer, 2006). Rice is the major caloric intake of developing countries. Women are already more vulnerable to nutritional problems (for example, 50% of the women and children in developing countries are anaemic) due to physical, social, economic, gender and cultural issues (e.g., pregnancy, lactation, inequitable food distribution within families).</p> <p>Reduction or extinction of marine species used by women for household consumption or for productive activities.</p> <p>In some cases, the trade-offs between consumption and survival can exacerbate gender bias in nutrition. Research in India has found that girls' nutrition suffers most during periods of low consumption and rising food prices, and that rainfall shortages are more strongly associated with deaths among girls than boys (UNDP, 2007).</p>
MDG 2: Achieve universal primary education	<p>Increases the workload needed for agricultural production and subsistence activities</p> <p>Environmental changes are likely to drive migration</p> <p>Less access to safe water</p>	<p>Generally, girls and women are responsible for the collection of water and fuelwood. In the poorest areas of the world, particularly sub-Saharan Africa, women and girls can spend 3–4 hours per day on these tasks. Flooding, drought and desertification can extend these burdens geographically, forcing more girls in more communities to forego education. Of the 115 million children of the world who do not go to school, three-fifths are girls, and women constitute 75% of the world's illiterate population (Oxfam, 2007).</p> <p>According to UNHCR, 80% of refugees in the world are women and children. Migration of populations, given extreme changes and disasters, could interrupt and limit the opportunities for education.</p> <p>Men are more likely to migrate, either seasonally or for a number of years. Female-headed households left behind are often the poorest. The workloads of these women, their children and the elderly increase significantly as a result of male emigration.</p>

<p>MDG 3: Promote gender equality and empower women</p>	<p>Increases deaths and injuries where inequality exists</p> <p>Exacerbates existing gender inequalities</p> <p>Inhibits political, economic and social empowerment</p>	<p>A 2006 study of 141 natural disasters by the London School of Economics found that when economic and social rights are fulfilled for both sexes, the same number of women and men die in disasters. On the contrary, when women do not enjoy economic and social rights equal to men, more women than men die in disasters. This gender discrepancy has come to light in a range of major disasters, including Hurricane Mitch, Hurricane Katrina, and other storms in the Americas; European heat waves; and cyclones in South Asia.</p> <p>In some Latin American countries, due to the social behaviour assigned to men, in disaster situations, men tend to take extreme risks during natural events under what is called the “superman syndrome.” This has caused unnecessary deaths, <i>i.e.</i>, crossing rivers with strong currents.</p> <p>When swift environmental changes arise, existing inequalities are magnified and traditional gender roles are reinforced. Historic disadvantages, including restricted access to land, resources, information, and decision making, result in heavier burdens for women during and after natural disasters.</p> <p>Women in developing countries are still largely responsible for securing food, water and energy for cooking and heating. Drought, desertification, and erratic rainfall result in women having to work even harder to secure these resources, leaving them with less time to earn income, get an education, or provide care to their families.</p> <p>Lack of representatives and women’s participation in the decision-making spheres related to climate change at all levels (local, national and international) result in the absence of gender-responsive policies and programmes.</p>
<p>MDG 4: Reduce child mortality</p>	<p>Environmental effects can aggravate the risk of contracting serious illnesses</p>	<p>Increase in women’s workload due to their role as primary carers in the family. <i>i.e.</i>, time spent on caring for children and the sick.</p> <p>Loss of medicinal plants used by women.</p>

<p>MDG 5: Improve maternal health</p>	<p>Increased prevalence of some vector-borne diseases</p>	<p>Women and children are fourteen times more likely to die than men during a disaster (Peterson, 2007).</p> <p>The high mortality rates of mothers/women/spouses during disasters result in an increase in: the numbers of orphans and mortality rates; early marriages for young girls (new spouses) causing them to drop out of school; trafficking and prostitution which in turn increase exposure to HIV/AIDS (Oxfam, 2005).</p>
<p>MDG 6: Combat HIV/AIDS, malaria and other diseases</p>	<p>Increase in temperatures (heat waves)</p>	<p>Migration enhances the risk of getting HIV/AIDS, given that families are separated and they are forced to live in overpopulated spaces.</p>
<p>MDG 7: Ensure environmental sustainability</p>	<p>Extinction of species, changes in species composition, disruption of symbiotic relationships, changes in trophic cascades, among others</p> <p>Changes in the quantity and quality of natural resources could reduce the productivity of ecosystems</p> <p>Floods, droughts, rising sea levels, melting of glaciers and polar icecaps</p>	<p>Without secure access to and control over natural resources (land, water, livestock, trees), women are less likely to be able to cope with climate change impacts.</p> <p>Adaptation measures, related to anti-desertification, are often labour-intensive and women often face increasing expectations to contribute unpaid household and community labour to soil and water conservation efforts.</p> <p>Decrease in forest resources used by women. Rural women in developing countries collect forest products and used them as fuel, food, medicines or food for their animals. The reduction or disappearance of these products will have a negative impact on the wellbeing and quality of life for them and their families.</p> <p>Women often rely on a range of crop varieties (agro-biodiversity) to accommodate climatic variability, but permanent temperature change will reduce agro-biodiversity and traditional medicine options.</p>

MDG 8:
Develop a Global
partnership for
development

Climate change
increases the
challenge of fulfilling
the MDGs

It is necessary to
increase financial
resources for
adaptation and
mitigation efforts

Incorporate a gender perspective into technology transfer, programmes and projects for generating capacities for mitigation and adaptation.

Promote, facilitate, develop and implement education and training programmes focused on climate change, targeting women in particular.

Facilitate public access to data and information, by providing the information on climate change initiatives, policies and results of actions that are needed by women to understand, address and respond to climate change, taking into account local and national circumstances such as quality of internet access, literacy and language issues.

Promote women's participation in addressing climate change and its effects and in developing adequate responses, by facilitating feedback, debate and partnership in climate change activities and governance.

The distribution of financial resources available for mitigation and adaptation must be allocated on the basis of gender equality principles.

Source: Aguilar *et al.*, 2007.

Module 4:

Gender mainstreaming in adaptation efforts

Gender and climate change can be a vicious circle of worsening inequalities and impact. It is well documented that climate change affects women more than men. This is because of existing inequalities. The vicious circle is that the more women are affected negatively by climate change, the worse the inequalities get. And the worse the inequalities get, the worse the impact becomes. This vicious circle has a devastating effect on economic and trade growth, and can significantly delay achievement of the MDGs (Supachai Panitchpakdi, Secretary-General of UNCTAD, 2008).

Key messages

- Adaptation measures reveal the human dimension of climate change;
- Both women and men are affected by climate change but existing inequalities determine who is most impacted by natural disasters;
- Men and women have different needs and interests in adaptation efforts;
- Women are important agents of change: their unique knowledge is essential for adaptation measures and policies;
- Full and effective participation of women is essential in order to make best use of their knowledge and experience.

4.1 Human adaptation to climate change

In recent years, the world community's paradigm about the role of adaptation in response to climate change has been reformulated. Adaptation was originally viewed as a secondary and long-term option to which to turn if mitigation efforts were not enough. As it has become clear that mitigation efforts will not be sufficient, adaptation is now considered to be a priority. Humanity,

Box 1 Definition of adaptation

The Intergovernmental Panel on Climate Change (IPCC) defines adaptation as: "...adjustments in ecological, social, or economic systems in response to actual or expected climatic stimuli and their effects or impacts. This term refers to changes in processes, practices, and structures to moderate potential damages or to benefit from opportunities associated with climate change."

Source: IPCC, 2001.

particularly communities at risk and people living in poverty, must be prepared for the effects of global warming.

Adaptation strategies for climate change will be more effective if made in a decision-making process in which all the parties affected participate. In this respect, it is essential to take the following into account:

- Access, control and distribution of benefits;
- Viability of communal and natural resources;
- Levels of vulnerability, resilience and autonomy of men and women when confronted with different threats;
- Importance of local knowledge for social and economic development;
- Present subsistence and adaptation gender strategies; and
- Disaster risk reduction (DDR) management to take action on causes and lessen impacts.

4.2 Gender inequalities intersect with risks and vulnerabilities

Box 2 Definition of vulnerability

“Vulnerability is the degree to which a system is susceptible to and unable to cope with adverse effects of climate change including climate variability and extremes. Vulnerability is a function of the character, magnitude and rate of climate change and the variation to which a system is exposed, its sensitivity and its adaptive capacity.”

Source: IPCC, 2007.

Vulnerability is the condition in which a population is exposed to or in danger of being affected by natural or human-made phenomena. It is dynamic and changes with time, place and social, economic, and political conditions (Wilches-Chaux, 1998).

The vulnerability approach in understanding relations between human populations and their environment tells us that vulnerability and therefore risk are social constructs, related to development processes.

Disasters related to natural or human-made phenomena, including climate variability and change, are not natural but are a result of decisions made within a social, economic and political context. Gender relations tend to play a major role in the structuring of this context and therefore will have importance in vulnerability and risk construction, and their effects.

The *Human Development Report 2007–2008* affirms that the historic disadvantages of women, with limited access to resources, restricted rights and no voice in decision making, make them extremely vulnerable to climate change. Given that there is a wide range of variability in the nature of this vulnerability, it is not enough to make generalizations, but climate change may increase present gender disadvantages (UNDP, 2007).

There is significant socio-economic differentiation between men and women that is deeply rooted in social structures around the world. These include differences in access to resources such as land, credit, education, as well as unequal opportunities to participate in and influence decision-making processes. Because women use and manage natural resources in a way that is different from men, and degradation of natural resources affects them differently, these patterns of disadvantage may increase with the change in or loss of natural resources associated with climate change. For example, rural women in developing countries are the principal producers of basic foods and the agricultural sector is very exposed to risks of drought and uncertain precipitation; this means that climate change endangers food security as well as the wellbeing of families and their capacity to survive (FAO, 2007).

Due to the fact that women are more vulnerable, women's participation in climate change adaptation initiatives is critical. Furthermore, it may be expected that women, by conserving the soil and water, building embankments to avoid floods and by doing more non-agricultural work, will make a large contribution to the efforts that will be required to confront climate risks.

4.2.1 Factors influencing risks for women in disasters

i) Physical location

The poor (the majority of whom are women) are likely to be physically located in places vulnerable to disaster risks and in poorly built environments. For example, in cities, they are likely to have inadequate housing, living in slums and shantytowns, with poor access to basic services, while in rural areas, they may

Box 3 Factors that influence the vulnerability of a population

Factors that influence the vulnerability of a population: environmental, physical, economic, and social which includes: political, ideological and cultural, educational, institutional and organizational.

A gender perspective to vulnerability has to consider all these factors and how they each affect men and women and in what specific ways.

Source: Wilches-Chaux, 1998.

be small agricultural farmers living on hillsides and river embankments which are prone to soil erosion, and therefore are at risk of losing their source of livelihood. A case in point is a local woman representative from Bangladesh, who explained that when floods arrived, poor women did not have the capacity and resources to move to higher grounds; she lost everything she had, including her livestock (cited in the Actionaid, WEDO and UNDP event at COP-13, December 2007).

In urban locations, poor women living and working in marginal areas can also be exposed to technological or human-made risks. In the Caribbean, urban women living on the island of St Lucia and in the city of Haina in the Dominican Republic specified being at risk due to industrial wastes (from pharmaceutical industries for example where they also worked) and from waste dumps and industrial warehouses which contain toxic and highly dangerous materials such as propane gas installations (Meyreles, 2003).

ii) Social aspects

Social vulnerability is linked to the level of wellbeing of individuals, communities and societies. It comprises features related to access to basic human rights, education and literacy levels, good governance, organizational systems, values, customs and ideological beliefs. Due to gender differences/gaps, many women are less privileged and as a result they are more vulnerable and therefore more likely to be exposed to greater risk.

For example, women are more prone to nutritional deficiencies because they have unique nutritional needs (especially when they are pregnant or breastfeeding); in south and south-east Asia, 45–60% of women of reproductive age are underweight and 80% of pregnant women have iron deficiencies (FAO, 2000). Gender-based violence is also a socio-cultural construct that can create specific risks for women and girls in disaster-related situations.

iii) Economic factors

Women are more susceptible to poverty, they have lower incomes than men, are more likely to be economically dependent and have limited access to land, finance and credit, as well as having limited likelihood of control over productive resources (Mehta, 2007); in south Asia women have less access to credit, technical resources and employment; they have limited ability to earn cash income; and have limited independent engagement in decision making;

which limits their capacity to respond to disasters. In India, Nepal and Thailand for example less than 10% of women farmers own land (FAO, 2007). Furthermore, women are over-represented in the informal economy and agricultural sectors, which are underpaid, and are most susceptible to disaster risks (Mehta, 2007).

iv) Education and information

As regards education and literacy levels, women and girls experience many obstacles that limit their opportunities to obtain an education; of the 876 million people in the world who are illiterate, two-thirds are women and three-fifths of the 115 million children that do not go to school are girls (Lara, 2004). It has also been noticed that after a disaster or during stressful times many girls are forced to drop out of school to help with chores in the house or to save money (Davis *et al.*, 2005).

Access to information, education and communication plays a critical role in determining the effectiveness of early warning systems which are critical in reducing the impact of floods, droughts, hurricanes, tsunamis and other disasters. Women have lower literacy levels, and therefore are less likely to respond to written early warning announcements and instructions; poor education leads to less involvement in decision making and less representation in disaster response organizations and training, hence lowering their capacity to respond to disasters.

v) Political will

Lack of political will to acclimatize to gender and climate change, and limited access to political power and representation for marginalized groups such as women exacerbates their vulnerability to disasters.

4.2.2 Vulnerabilities and capacities

It is important to note that the differences in men and women's social positions not only create specific gendered vulnerabilities and risks but also generate gender-specific capacities. The specific capacities that women have developed in different social and cultural settings can be very important during all the phases of disaster management and also for climate change mitigation and adaptation efforts. For example, research on women's risk at the local level in the Caribbean (Enarson *et al.*, 2001) has shown that Caribbean

women consider family and friends networks as their main capacity during disaster situations. In Dominica, for example, the Koudmen, or family and friends network, has a sacred character (*ibid*). Women in communities tend to have valuable information regarding community and family members: who is missing, who needs special attention. Local governments should start a bottom-up process where these capacities and others are recognized and utilized. The Cuban experience in disaster management is a good example of a community-based approach (Wisner *et al.*, 2006).

Disaster studies contain many examples of analyzing gender vulnerabilities and capacities that could be very useful for climate change adaptation efforts (see Gomariz, 1999).

4.2.3 Disaster risk management

Climate change is not a threat associated with an isolated catastrophe but with the risk of disaster which, in many respects, is slow to appear. In this context it is fundamental that adaptation and mitigation strategies, initiatives and policies, should include an understanding of the notion of risk management with a gender approach and *vice versa*.

Box 4

Disparities that increase risks for women in disasters

- High level of poverty
- Extensive responsibilities dealing with the caring of others
- Domestic violence
- Traditional women's occupations

Disparities that increase risks for men in disasters

- Occupational segregation
- Internalized masculinity norms
- Roles in the family and in the home

Gender experiences that can increase capacities for managing disaster situations

Women

- Social networking
- Caring abilities
- Extensive knowledge of communities
- Management of natural environmental resources
- High levels of risk awareness

Men

- Professional and work contacts
- Technical abilities
- Limited child care responsibilities

According to Burón, risk management is a process whose ultimate aim, as part of a sustainable development proposal in the social, economic and territorial spheres, is the permanent reduction and control of disasters in society (Burón, 2007). In other words, risk management is the result of the capacities of societies and their stakeholders to transform risk by acting on its external and underlying causes. It includes intervention methods and means that tend to reduce, mitigate or prevent disasters.

Disaster risk management and climate change adaptation efforts should be integrated. The Oslo Policy Forum Report recognized

Box 5 Example of the consequences of the lack of a gender response in early warning systems

- During the Bangladesh cyclone of 1991, early warning signals did not reach large numbers of women. The information was passed through the market places, and because Bangladesh society is highly sex-segregated, many women do not have easy access to market places.
- It had been expected that men would convey the warning to their family members but they did not do so; consequently women were uninformed, unprepared, and unable to respond to the risks of disaster for themselves, their children, and their belongings.
- Relief distribution centres and shelters were reported to be ill-suited for women's gender and culture-specific needs: in a social context where seclusion is customary, the shelters were reported to be crowded and lacked privacy for pregnant, lactating and menstruating women. Shelters also lacked separate toilets and adequate water supplies (UNEP, 1997).
- Studies have shown that ensuring women have access to the warning systems, achieves positive results. In Hawaii during the 1998 El Niño event, women were targeted with early warning information that included information about treating drinking water; this succeeded in significantly reducing the incidence of diarrhoea (Kinoti, 2008).
- In rural communities of El Salvador, women were taught how to use radios in order to report on rising water levels. This led to more effective early warning information for the whole community (Enarson *et al.*, 2003).
- There are disaster warning information needs specific to women. A study conducted in South Africa reported that women farmers preferred seasonal climate forecast information to be relayed by extension workers or through schools as opposed to the radio, which was the preferred medium for men since men have greater access as well as more time to listen to radios (Kinoti, 2008).

that “DRR is a fundamental element to achieve climate change adaptation” (OPFR, 2008). The report makes specific recommendations regarding funding, development plans at all levels, integration and communication efforts between DRR and climate change experts. It also stresses collaborative efforts and strengthening of the international system, amongst other important suggestions, in order for disaster risk management and climate change adaptation to become concerted efforts and support sustainable development (*ibid*).

Disaster risk management may function as a link between decision making, planning, execution and control that allows women and men to analyze their surroundings, and decide and develop proposals about concerted action designed to reduce existing risks, that is to say risks which, if not properly managed, may become disasters.

A gender-differentiated impact becomes more evident during emergency situations:

- Neumayer and Plümper analyzed disasters in 141 countries and found that, when it came to deaths, gender differences were directly linked to women's economic and social rights; in societies where women and men enjoyed equal rights, disasters caused the same number of deaths in both sexes. They also confirmed that discrepancies were the result of existing inequalities. For example, boys were given preferential treatment during rescue efforts and, following disasters, both women and girls suffered more from shortages of food and economic resources (Neumayer and Plümper, 2007).
- Studies show that women, boys and girls are 14 times more likely than men to die during a disaster (Peterson, 2007).
- In 1991, during the cyclone disasters in Bangladesh, of the 140,000 people who died, 90% were women (Ikeda, 1995).
- In industrialized countries, more women than men died during the heat wave that affected Europe in 2003. In France most deaths were among elderly women (Pirard *et al.*, 2005).
- During the emergency caused by Hurricane Katrina in the United States, most of the victims trapped in New Orleans were Afro-American women with their children, the poorest demographic group in that part of the country (Gault *et al.*, 2005; Williams *et al.*, 2006).

- In Sri Lanka, it was easier for men to survive during the tsunami because knowing how to swim and climb trees is mainly taught to boys. This social prejudice means that girls and women in Sri Lanka have very few possibilities of surviving in future disasters (Oxfam, 2005).
- Following a disaster, it is more likely that women will be victims of domestic and sexual violence; they even avoid using shelters for fear of being sexually assaulted (Davis *et al.*, 2005).
- Nutritional condition determines the capacity to deal with disasters (Cannon, 2002). Women are more likely to suffer from malnutrition because they have specific nutritional needs when they are pregnant or breast-feeding, and some cultures have food hierarchies. For example, in south and south-east Asia, 45–60% of women of reproductive age are below their normal weight and 80% of pregnant women have iron deficiencies. In sub-Saharan Africa, women lift much heavier loads than men but consume fewer calories because the culture rules that men receive more food (FAO, 2000).
- In some cases, gender differences also increase men's mortality in disaster situations. Many men are exposed to risky situations and even die because they believe that by being the "stronger sex" they need not take precautions and because society expects them to take heroic rescue action. For example, there were more immediate deaths among men when Hurricane Mitch struck Central America, not only because they were engaged in open-air activities, but because they took fewer precautions when facing risks (Bradshaw, 2004).
- In Kenya, fetching water may use up to 85% of a woman's daily energy intake; in times of drought a greater work load is placed on women's shoulders, some spend up to eight hours a day in search of water (Duncan, 2007).
- Extreme weather events often create conditions conducive to outbreaks of infectious diseases; heavy rains produce insect breeding grounds, and contaminate clean water sources while drought on the other hand can cause fungal spores and spark fires. Women, especially expectant mothers, are highly vulnerable to water-borne diseases, thermal and other extreme events.

- In refugee camps that arise as a result of natural disasters and conflicts over scarce resources, women and the girl child refugees are exposed to higher risks compared to male refugees. Social strains in such situations aggravate stress levels in the family, which may result in incidences of domestic violence.
- A study in Uganda shows how male and female-headed households fare differently in resettlement situations. Women agreed “it was a much harder job for them due to lack of tools and men”. The impact of resettlement on health, supplying basic necessities such as water and childcare, was much worse for the female-headed households (Katwikirize, 2002).

Box 6 Seven principles when including the gender perspective in reconstruction and recovery: Work done in disaster situations is not gender-neutral

1. Think big: gender equality and the principles of risk reduction must guide all disaster mitigation aspects, responses to disasters and reconstruction. The window of opportunity is quick to close.
2. Know the facts: gender analysis is not an option but it is imperative to direct help and plan an equitable recovery.
3. Work with women in base organizations: in communities the women’s organizations have information, knowledge, experiences, networks and resources that are vital to increase resilience when faced with disasters.
4. Work with and build the capacities of existing women’s groups.
5. Resist stereotypes: base all initiatives on knowledge of the specific contexts and differences of each culture, economic situation, as well as political and sexual differences, and not on false generalizations.
6. Use a human rights approach: democratic and participatory initiatives are of more help to women and girls. Both men and women have a right to the conditions they need to enjoy their fundamental human rights, as well as simply to survive.
7. Respect and build women’s capacities. Avoid overburdening women who already have a very heavy workload and many family responsibilities.

Source: Gender and Disasters Network, 2005.

By excluding women from climate change decision-making processes, societies are excluding the voices of half the world's population, contravening the principles concerning their rights and, at the same time, depriving themselves of an important number of skills, experiences and capacities. Women's environmental resources, knowledge and practices are key elements in climate change processes, for example:

- During a drought in the small islands of the Federated States of Micronesia, the women's ancestral knowledge of the islands' hydrology allowed them to easily find places to dig wells for drinking water. The women do not normally become involved with decision making, but the information they provided benefited the entire community (Anderson, 2002).

4.3 The role of women in climate change adaptation

4.3.1 Women and men as agents of change

As already stated in Module 3, it is necessary to stress that women are not vulnerable because they are "naturally weaker", but because conditions of vulnerability faced by men and women are different because of their gender. Women, like men, have particular socially-built vulnerabilities and capacities which have been developed through a socialization process. They are, however, also capable of bettering themselves, becoming empowered, or changed. Women are not passive, they do not only receive help – they are active agents with different capacities to respond to the challenges posed by climate change.

4.3.2 Differentiated relationship of women and men with the environment

When we discuss vulnerabilities, or the role women and men can play as change agents, the starting point is an analysis of the differentiated relationship women and men have with environmental resources. Women and men relate differently to the environment for a combination of the following reasons:

- Level of dependence on environmental subsistence resources;
- Unequal relations in using, having access to, and controlling resources, and in the distribution of benefits;
- Ownership of, and rights to, resources; and

- Differentiated knowledge about resources, their products and environmental problems.

As discussed in 4.2, when ecosystems become more fragile and natural resources are totally lost or are out of reach, poor communities – that depend on them for their survival – are the most affected, particularly women, the elderly and children.

Because women use and manage natural resources in a way that is different from men, and degradation of natural resources affects them differently, these patterns of disadvantage may increase with the change in or loss of natural resources associated with climate change. For example, rural women in developing countries are the principal producers of staple foods. Their role in agricultural production is essential for the nutritional status of families as well as the generation of a source of income. However, female farmers are often overlooked in agricultural policies and strategies or those relating to climate change. Farmers are often perceived as “male” by policy makers, planners and agricultural service deliverers. As the agricultural sector is very exposed to risks of drought and uncertain precipitation, this means that climate change endangers food security as well as the wellbeing of families and their capacity to survive (FAO, 2007).

In the Dominican Republic, urban women living in marginalized sectors, for example in the city of Santo Domingo, many of whom are heads of households, are responsible for the family's water supply. In areas where there is no piped water, women have to travel distances to get fresh water, or buy water, thus straining low family incomes with no guarantee as to the quality of the water (Meyreles, 2004). Climate change could greatly affect the situation of families living in these conditions, impacting on health and income in important ways.

4.3.3 Women's role in adapting to and mitigating climate change

Due to women's higher level of vulnerability, as a result of historic and existing socio-economic inequalities, their participation in climate change adaptation initiatives is critical. Furthermore, it may be expected that women, in their specific relation to natural resources, through the conservation of soil and water, the building of embankments to avoid floods and other types of related activities could make a significant contribution to the efforts that will be required to confront climate risks. One example is the community of Keur Moussa in Senegal, where erosion was making less water available, washing the soil off the land used for sowing crops, and causing young men and women to migrate to the

Box 7 Women's successful action in Nigeria

In 1999, women in Nigeria headed a world movement to stop flaring natural gas. A transnational oil company in their country was burning most of the natural gas to cut maintenance costs and avoid involvement with other industries; the amount of gas being burnt was more than in any other part of the world and emitted more greenhouse gases into the atmosphere than the whole sub-Saharan region. In 1999 the women of the Niger delta organized simultaneous protests in Nigeria and the United Kingdom that resulted in the company's London headquarters being closed, and the temporary closing of the wells. As the protests continued, the company turned to military control and in a confrontation, 200 people were killed and many women raped. Hundreds of women members of the Niger Delta Women's Organization for Justice, indignant about the rapes and assassinations, organized a protest, as well as several political awareness workshops for women. Finally, in January 2006, due to social pressure, the Nigerian courts cancelled the gas company's licence and ordered that a stop be put to flaring natural gas in petroleum wells in the western zone of the Niger delta. This unprecedented international action shows that women are important agents for change who can help to mitigate climate change.

Source: Adapted from Turner and Brownhill, 2006.

cities. Women's organizations helped to control erosion by building canals in the shape of a half moon to retain the water, recover the crop lands and improve agricultural output (see Case study 2 in Module 6).

4.3.4 Risk management and empowerment of women

As described above, women are mostly perceived as victims of climate change and not as positive agents of change that can contribute to adaptation strategies. Moreover, it is not often recognized that natural disasters could also provide women with a unique chance to challenge and change gender roles in their society (Enarson, 2000). For example, in 1998 the community of La Masica, in Honduras, was given gender-sensitive community training about early warning and risk systems. With that training, the women in the community took charge of monitoring the early warning systems that had been abandoned. Six months later, during Hurricane Mitch, not a single death was reported in La Masica because the municipal government was able to evacuate the population in time (Sánchez del Valle, 2000). Women took on an active role in an area that was traditionally considered only for men. Another example is that of the NGO *Puntos de Encuentro* in Nicaragua which, after Hurricane Mitch, organized the information campaign "Violence against women is one disaster that men can

prevent". The campaign proved effective in changing men's attitudes towards violence against women, and therefore tackled existing power structures (Pan-American Health Organization, 1998 as quoted in WEDO, 2008).

Another example comes from Bangladesh, where climate patterns have changed in recent years and rains have become increasingly stronger and less predictable. The floods of 2004 left enormous losses with 280 people losing their life, around four million having to be evacuated and thousands of others left without food or housing (MAAS, 2004). In the district of Gaibandha a woman named Sahena was trying to deal with these flood patterns. She organized a committee in her community to prepare women for when the floods arrive. The committee taught the women to make portable clay ovens, to raise their houses and use radios to hear of possible floods or climate change. Although Sahena faced resistance from her husband and women in the community, she became president of the committee and managed to earn the respect of the community. Efforts such as hers save lives and empower women (Oxfam, 2008).

During the aftermath of Hurricane Georges in the Dominican Republic, local rural and urban women's organizations were the first to deal with the situation in shelters. Due to their work with endemic medicinal plants, the women were able to help with remedies and providing care, before official medical personnel could come in. These organizations also helped with reconstruction efforts, getting aid for rebuilding homes for the community and helping women to take part in credit projects for rebuilding. This gave women a new status in their community and changed the way women were perceived and their role in decision making (Meyreles, 2000).

4.4 Climate change adaptation and equitable access to resources

An understanding of the relations between gender and sustainable development requires an analysis of patterns of use, knowledge and skills related to managing, using and conserving natural resources. Only by applying a gender approach is it possible to have a clearer and complete view of the relations people have built with ecosystems. Men and women face their social, economic and environmental reality in different ways; how they participate is also different and is closely related to age, socio-economic class and culture. For example, women have access to only 5% of the concessions given worldwide to manage and use natural resources.

The following resource sectors, in addition to the forestry and energy sectors outlined in other modules of this training manual, are relevant for finding equitable adaptation responses to climate change.

4.4.1 Water and sanitation

Climate change causes increased water availability in humid tropics and at high latitudes, and a decline in water availability and increase in droughts at mid latitudes and low semi-arid latitudes. These changes lead to hundreds of millions of people being exposed to increased water stress. More than 1,000 million people in less developed countries have no access to drinking water and 2,400 million lack access to a proper sanitary service.

In most parts of the world, in rural and urban areas, women and girls are responsible for collecting water for cooking, cleaning, health and hygiene, and if they have access to land, growing food. Increasingly limited water supplies, poor service delivery, and pollution are jeopardizing women's survival and that of their families.

4.4.2 Biodiversity and ecosystems

It is estimated that each temperature increase of 1°C makes species migrate up to 160 km away from the zones where they are located, because seeds are dispersed and habitats changed. The speed with which climate change is occurring will be such that it will not allow natural adaptation and will put to the test the resilience of socio-economic systems. In addition, anthropogenic changes in most cases reduce options for finding appropriate locations to which to migrate. If species are not able to find new habitats, change their life cycles, or if they do not have evolutionary processes that result in new physical characteristics, they will be condemned to extinction. Ecologists have estimated that between 15–37% of natural species may be extinguished by 2050 as a result of climate change and habitat change (Thullier, 2007). Studies have demonstrated that certain species are more vulnerable than others to the effects of climate change. For example, it is predicted that, if present GHG emissions are maintained, up to 60% of mountain plant species could be extinguished (Thullier, 2007) and that coral reefs will experience episodes of bleaching every two years (Donner *et al.*, 2007).

Changes in precipitation, melting ice patterns and glacier reduction will affect the levels of rivers and lakes, limiting access to drinking water. This is vitally important in regions that get their drinking water from melting mountain snow and ice and in which a sixth of the world's human population lives. The inhabitants of dry lands face more frequent and longer-lasting droughts. As this situation worsens, millions of people will be obliged to move when they see their water sources impaired.

It may also be anticipated that the natural response of human beings to the rise in temperature will be to increase their demand for potable water for urban and agricultural needs. This will cause wetlands to be over-exploited with the effect of reducing flows in rivers and streams. The rise in temperature will lead to increased evapotranspiration, reduced run-offs and infiltration and, therefore, less availability of fresh water and soil humidity. Forest fires are also an increased risk.

Women and men play different roles in community conservation efforts, with women often taking leadership in seed selection and preservation. Women have a profound knowledge of the flora and fauna in their environment and respective conservation methods, and traditionally have used indigenous resources for food, medicines and energy. It has been found that women invest 90–95% of the money they receive related to biodiversity on improving the family's quality of life. When species are lost, this has an impact on the most vulnerable groups, particularly women. While biodiversity management systems rely on women's knowledge, skills and labour, it often does not include women in decision making, including related to new technology or information (FAO, 1999).

The use of energy and the production of energy are also areas in which men and women have different roles, information and perspectives. Energy-saving activities will affect women's household activities and may take up more time. Situations in which energy is scarce, specifically in urban settings where activities depend on energy input, can produce life-threatening situations due to improper or illegal connections to power supplies in poor settlements. Generators and other energy-producing technologies can be highly contaminating, specifically in the home where women and children are. In the Dominican Republic, between 1960 and 2000 the majority of small disasters

occurred in poor urban homes due to fires caused by electrical short-circuiting (IFC and LA RED, 2002). Access to clean and safe energy is an important aspect of avoiding disaster situations and of adaptation strategies for climate change.

4.4.3 Agriculture and food security

Agricultural ecosystems and food security are especially vulnerable to climate change. There are localized negative impacts on small landowners, subsistence farmers, and fishermen, and declines and increases in cereal crop yields depending on the region.

Since the practice of agriculture began more than 12,000 years ago, about 7,000 species of plants have been cultivated for food, and today 90% of our food is provided by only 15 species of plants and eight species of animals. Conserving varieties of wild ancestors of these foods could provide alternatives so that, in future, new species could be developed that are resistant to drastic climate changes. Unfortunately, many of these wild ancestors are already in danger of extinction. For example, it is predicted that a quarter of the wild potato species will disappear in the next 50 years (CBD, 2007). Projections made by the IPCC indicate that agriculture in hot subtropical countries will be more affected than in temperate subtropical countries.

In the agriculture sector, rural women in less developed countries are the principal basic food producers. This sector is very exposed to risks of drought and potential rain pattern changes.

The Oslo Policy Forum recommends land use, land tenure and legal aspects concerning the poor be taken into consideration when looking at climate change adaptation. In all of these aspects women have specific conditions, which could place them at a disadvantage (Oslo Policy Forum Report, 2008).

4.4.4 Coasts

Erosion of coastal zones and an increase in sea level caused by melting ice will produce particularly significant effects: floods in coastal zones and salt water invading freshwater reserves such as estuaries and aquifers. The IPCC emphasizes that developing countries face major challenges in adapting to these changes, above all considering that these densely populated zones will be affected by other phenomena such as tropical storms. Coastal areas are

more vulnerable to damage caused by floods and storms, and about 30% of the coastal wetlands may disappear.

Women are involved in the fisheries sector, particularly in processing fish, preparing for market, small-scale harvesting, activities that are close to the shore. Due to their focus on activities that are often on the sideline of harvesting, women's tasks in relation to fisheries have not been prioritized in economic analyses or resource investment. Limited access to and representation in decision making has also led to women's interests not being included in coastal plans (CIDA, *n.d.*).

4.4.5 Desertification

Climate change accelerates the loss of vegetation and thus desertification. As rainy seasons become shorter and droughts increase, land erosion and infertile soils become the norm. Decreased vegetation cover then reduces rainfall further through increased evapotranspiration. This cycle that is exacerbated by climate change also affects rural livelihoods. In addition to threatening food and water security, rural communities are faced with conflicts over resources and may be forced to migrate. In Africa, droughts and floods have become more intense and more irregular in recent decades. Droughts are the most serious cause of food shortages, causing 60% of food emergencies (GTZ and OSS, 2007).

Women's traditional roles and knowledge in natural resource management and agricultural practices are central to preserving food, water and medicines. Yet in drylands throughout the world, particularly in much of Africa, women are affected by erosion and decreased crop and livestock productivity. A variety of factors contribute to women's unequal access to services and decision making, including lack of land ownership, illiteracy, political will and gender bias, and cultural restrictions.

4.4.6 Health

Most health consequences of climate change will be adverse. It is estimated that in 2000 alone, climate change was responsible for 2.4% of cases of diarrhoea worldwide and 6% of cases of malaria. In general terms, climate change will have three types of health repercussions:

1. Direct effects of extreme climate events;
2. Consequences on health caused by environmental disorders due to climate change; and
3. Other consequences on health (*i.e.*, traumas, infections, psychological diseases and negative effects on food security, among others) caused by populations being displaced due to economic problems, environmental degradation or conflicts arising because of climate change (World Health Organization, 2003).

Climate change will lead to increased malnutrition and gastro-intestinal, cardio-respiratory and infectious diseases. Heat waves, floods and droughts will lead to increased mortality and changes in the distribution of some disease vectors. Health services will also be burdened by an increase in patients. Children, particularly girls, and the elderly are most vulnerable to heat stress and the spread of disease. In times of disaster and environmental change, women and girls are expected to care for ill members of the family, which takes time away from income generation and education. Women and girls may have difficulty accessing health services due to high medical costs and cultural restrictions related to mobility (Brody *et al.*, 2008).

4.4.7 Negative effects of adaptation initiatives on gender inequality and possible solutions

Below an analysis is made of a series of adaptation measures based on the suggestions made by Aguilar *et al.* (2008). The possible negative impact of not taking into account gender relations, that is to say, replicating inequality, is shown. Suggestions are also made that may be considered when designing and implementing such measures.

Table 1. Gender-sensitive adaptation measures

1 Managing infrastructure and settlements

Measures	Possible negative impacts	Suggestions
Build breakwaters or seafronts, dikes and barriers against rising tides	<p>May create job sources that favour hiring a male work force with no opportunities for women to work on jobs they would like to do and can do.</p> <p>Ignorance of the impact on women's productive activities (hand digging for molluscs, among others), with no attention paid to the consequences of the impact.</p>	<p>Promote training and hiring of both women and men.</p> <p>Ensure access to wage-earning productive activities to improve living conditions for families.</p> <p>Include gender criteria in Environmental Impact Assessments (EIAs).</p>
Re-zone settlements and productive activities in coastal areas	<p>May create job sources that favour hiring a male work force with no opportunities for women to work on jobs they would like to do and can do.</p> <p>Ignorance of the impact on women's productive activities (hand digging for molluscs, among others), with no attention paid to the consequences of the impact.</p>	<p>Involve women in monitoring the effects of climate change, for example in coral ecosystems and in aquaculture.</p> <p>Include women in strategies to adapt to the reduction of marine species, or managing new marine species.</p> <p>Develop initiatives to recover and reforest mangroves.</p> <p>Implement integrated coastal management policies that consider risk management and gender approaches.</p> <p>Include gender criteria in EIAs.</p>
Build bridges to cross areas subject to flooding	<p>May create job sources that favour hiring a male work force with no opportunities for women to work on jobs they would like to do and can do.</p> <p>Ignores men's and women's specific interests and necessities related to the use of space.</p> <p>May lengthen or make more difficult many women's working day by increasing distances they must cover if bridges are built exclusively for transport.</p>	<p>Consider the practical needs of spatial mobility.</p> <p>Promote training and hiring of both women and men.</p> <p>Develop land use with a gender approach.</p> <p>Include gender criteria in the EIAs.</p>

Divert fresh water to areas where there is a water shortage (dikes, water transfer, or irrigation canals) or increase extraction from subterranean water reserves

Ignores women's requirements of fresh water needed for their productive and reproductive activities.

May lengthen and intensify women's productive and reproductive working day by placing water sources in distant zones.

Privatizing water means high prices, loss of supply, health problems, corruption, etc., making it harder for poor women and their families to have access to it.

Use a gender approach when diagnosing and planning communities' freshwater requirements.

2 Managing ecosystems

Measures	Possible negative impacts	Suggestions
Introduce native and salt-tolerant plants and animals to protect/revegetate the coast	<p>May have a negative effect on women's interests and needs in coastal zones, if varieties introduced affect resources specifically used by them.</p> <p>May conceal women's knowledge and practices concerning environmental coastal resources by ignoring them in decision making.</p>	<p>Analyze gender relations associated with the use of, access to, management and control of coastal environmental resources.</p> <p>Promote equitable inclusion of women and men when introducing varieties.</p> <p>Create jobs with equitable participation of women and men.</p>
Introduce varieties of plants and crops tolerant to high temperatures	<p>Usually require water and other resources used by women for reproductive work and household consumption.</p> <p>May lengthen women's productive and reproductive working day.</p>	<p>Analyze the impact of introducing new varieties and promote a more equitable distribution of reproductive work.</p> <p>Facilitate equitable access to and control of resources, as well as the distribution of their benefits (including productive resources, jobs, training and credit).</p> <p>Encourage exchanges of knowledge and practices between women and men about managing species.</p>

Restore damaged ecosystems

May worsen gender inequality by encouraging the voluntary (unpaid) work done by many women in rehabilitation and conservation activities.

May reinforce traditional environmental work roles, for example, making women responsible for cooking, community meetings, children's and adolescents' environment education, without promoting non-traditional roles.

Promote joint responsibility and redistribution of reproductive work in families, to give women free time for other activities.

Encourage paying women for their work on environment restoration.

Train women and men on non-traditional activities related to rehabilitating ecosystems.

Encourage leadership and women's effective participation in organization and decision making.

Establish natural protected areas and biological corridors

May prohibit productive activities that are sources of income for households, some of them poor and headed by women.

Take advantage of and pay for women's and men's knowledge about plant and animal species in natural protected areas and corridors.

Analyze gender relations associated with the use of, access to, management and control of resources.

Introduce herbicide-resistant varieties

May use herbicides without considering gender specifics when chemicals and containers are handled. They injure men and women (for example, during pregnancy and breastfeeding) in different ways.

Analyze the production process, paying attention to the use of herbicides by people with access to chemicals and containers.

Introduce drought-tolerant varieties

May lengthen the productive or reproductive working day; for example, the growth period of plants may be extended.

Consider options that tend to have a bearing on reducing the length of women's working days.

Ensure that alternatives are helpful to local families' food security and do not damage health or the environment.

Implement reforestation, afforestation, or reduce deforestation, as well as soil degradation strategies

May harm women's interests and needs if these practices affect or limit access to resources they specifically use.

May conceal women's knowledge and practices related to environmental resources, by not taking them into consideration in decision making.

May create job sources that favour hiring a male work force with no opportunities for women to work on jobs they would like to do and can do.

Analyze gender relations associated with the use of, access to, management and control of environmental resources.

Promote equitable integration of women and men in mitigation strategies.

Establish aquaculture, including mariculture, to compensate for losses in food production caused by extreme climate events	<p>May reinforce the traditional division of labour, and inequality in access to productive resources and their benefits.</p> <p>May conceal the active participation of women in productive processes, for example, fishing.¹</p>	Promote equitable integration of women and men in productive and reproductive activities.
---	---	---

3 Productive activities

Measures	Possible negative impacts	Suggestions
Change crop irrigation; times, type and uses	<p>May remove water sources for domestic use or place them further away.</p> <p>May lengthen or intensify the productive and reproductive working day.</p>	<p>Consider women as water users, both domestically and for production such as growing crops and raising animals.</p> <p>Analyze the use women can make of irrigated land to provide subsistence foods.</p> <p>Promote technologies appropriate to the needs of women and give them the proper training.</p> <p>Encourage equity in access to irrigated land ownership.</p>
Substitute agriculture	<p>May not take account of women's participation in agricultural activities, excluding them from new processes.</p> <p>Again may raise obstacles to using, having access to, managing and controlling resources (land, credit and training).</p>	Build new capacities for women and create non-traditional job sources.

¹ Women are often responsible for making nets, collecting bait, fishing in estuaries, on coasts and in intertidal zones, processing and selling, and work on fish farms and in processing plants. From the coast they also support their companions with tasks related to communications, accounts and quality control, or in preparing food for fishing trips.

4 Socio-economic processes

Measures	Possible negative impacts	Suggestions
Migration and community destabilization in areas affected by climate change.	<p>Socio-economic and gender inequalities in access to job opportunities, education, health, housing and credit.</p> <p>More households headed by women in societies that still exclude and discriminate against women heads of households.</p> <p>More women in jobs traditionally considered as “masculine,” where they are exploited, and poorly remunerated in irregular or seasonable jobs.</p> <p>Increased incidences of harassment, sexual abuse and domestic violence during the migratory cycle.</p>	<p>Promote the exercise of women’s rights.</p> <p>Encourage access by women and men to skilled and remunerated jobs.</p> <p>Ensure women and men have access to labour protection systems.</p> <p>Draw attention to the contribution migrant women and men make to their families and communities.</p> <p>Develop support services for communities, families and individuals left behind (who remained in the community of origin) as a result of migration.</p>

4.5 Gender-sensitive national planning

4.5.1 National Adaptation Programme of Action (NAPA)

The UN Framework Convention on Climate Change (UNFCCC) requires that Least Developed Countries submit a National Adaptation Programme of Action (NAPA) where the country describes its priorities and strategies in relation to coping with climate change. The UNFCCC itself does not require the NAPAs to include a gender perspective; however, it is advised to include a gender principle and hire gender teams to work on gender-mainstreaming the NAPAs (Dankelman, 2008). These recommendations are not enforced, therefore gender issues rarely get written into the project’s main adaptation focus. While many countries have noted the increased levels of vulnerability experienced by women dealing with changing climates in their NAPA, few have targeted women as direct agents in climate change adaptation strategies.

Gender perspectives are relevant to key points of the NAPA; including governance, information gathering, access to finance and technology, and NAPA implementation (WEDO, 2008). While all NAPAs have been completed as of this writing, the implementation and budget are entry points for gender mainstreaming. Prior to implementation, a gender analysis of the NAPA can be undertaken, in order to review how climate change affects women and

men differently, and to explore scaling up of specific innovations that promote gender equality and women's participation. Also, to ensure gender targets are being consistently met, a "gender team" can be formed to create processes that monitor gender targets at all stages. Mainstreaming the NAPAs with a gender perspective will not only contribute to successful progression towards the Millennium Development Goals (MDGs), but also alleviate environmental pressures by utilizing an overlooked demographic as innovative and potent agents of change.

The following steps for gender mainstreaming were adapted from "Mainstreaming Gender into the Climate Change Regime" (COP 10, 14 December, 2004) and were supported by the UNEP Women's Assembly, held in Nairobi in October 2004:

- Analyze the effects of climate change from both a male and female perspective;
- Incorporate a female perspective when designing and implementing projects;
- Gender-sensitive criteria and indicators should be developed and applied;
- When collecting and presenting data include women's statistics as well as men's;
- Capitalize on the talents and contributions of both women and men;
- Set targets for female participation in activities;
- Ensure that women are represented in 50% of all decision-making processes;
- Make women's equality, access to information, economic resources and education a priority;
- Focus on gender differences in capabilities to cope with climate change adaptation and mitigation; and

- Undertake a gender analysis of all budget lines and financial instruments.

NAPAs must take into consideration economic aspects such as budgeting, not only for mitigation and adaptation initiatives but also for the development of the NAPA. Writing NAPAs implies the use of resources and these should be tied to gender-sensitive processes. NAPAs must also be based on and include local development plans, insuring a bottom-up approach to the whole process, their reviewing and approval and they must guarantee the inclusion of gendered local knowledge.

NAPAs must be tied into disaster risk management plans. This implies a coordinated effort on the part of governments and the private sector, and all stakeholders. The links between sustainable development, disaster risk management and climate change mitigation and adaptation should be essential to NAPAs. The Oslo Policy Forum Report clearly states that there should not be “parallel agendas”, and development planning, national budgeting for adaptation, institutional arrangements, public awareness, the poverty issue and peace and conflict issues should all be integrated into the agendas. This process must be construed to guarantee a gender perspective, which many governments have not yet been able to implement. Tying the budgeting process to the inclusion of a gender perspective could help to guarantee success.

NAPAs should stress the costs of adaptation. There has to be specific and clear information as to the financing process for adaptation initiatives. These initiatives have to be gender sensitive and the costs for this must be clearly stated (Oslo Policy Forum Report, 2008).

4.5.2 Disaster Risk Reduction plans

The UN International Strategy for Disaster Reduction (UN/ISDR) has taken steps to include gender in its Disaster Risk Reduction (DRR) plans of action under the Hyogo Framework of Action (HFA). In the DRRs, gender is incorporated by ensuring equal access to educational opportunities for vulnerable women, developing early warning systems which take gender and cultural livelihoods into account, and by utilizing a gender perspective in decision-making processes when implementing risk management policies. DRRs are meant to be implemented in national action plans in preparation for natural disasters. UN/ISDR is involved in gender mainstreaming and lessons learned in the field and uses examples of women as powerful agents of

sustainable change (UN/ISDR, 2008). This can be an example of lessons learned and can be used by development planners to modify projects so that they capitalize on the significance of women's input and their eminent potential for change.

DRRs can be modified to promote more gender-sensitive approaches in guiding countries towards more sustainable practices while reducing the impacts of natural disasters. New strategies can be created from a gender perspective, existing projects can be scaled up to ensure the vital participation of women at every level, and women's networks can be used to lead their communities, not only in times of disaster, but to become regular fixtures on local, national and international stages (UN/ISDR, 2008). Incorporating a gender perspective in DRRs, including through gender-sensitive data and promoting women's participation, can help bring a gender perspective to all levels of disaster preparedness.

The following steps for gender mainstreaming the DRRs were adapted from "Gender Perspectives on Climate Change" (52nd session of the United Nations Commission on the Status of Women, 28 February, 2008) and are meant to act as interactive guidelines for including women at all levels of the response to climate change and natural disasters:

- Include gender perspectives into disaster reduction efforts at the national, regional and international levels – including in policies, strategies, action plans and programmes;
- Analyze climate change data (such as desertification, floods, drought and deforestation) from a woman's perspective;
- Take gender-conscious steps to reduce the negative impacts of natural disasters on women, particularly in relation to their critical roles in rural areas in provision of water, food and energy;
- Increase the participation of women in all levels of the decision-making process;
- Identify key women at local levels to guarantee gender perspectives are considered when preparing early warning mechanisms;
- Ensure that women are being visibly used as agents of change at all levels of disaster preparedness, including early warning systems, communication networks and educational opportunities;

- Consider the level of a woman's access to technology and finances in times of crisis; and
- Collect/analyze data that includes both men and women.

Further resources

Aguilar, L., Araujo, A., Kring, E., Quesada, A. and Zuñiga, P. (2008). *Guía: Recursos de género para el cambio climático*. Mexico: UNDP.

Anderson, C. (2002). *Gender Matters: implications for climate variability and climate change and for disaster management in the Pacific islands*. Retrieved from the World Wide Web: <http://www.gencc.interconnection.org/resources.htm>

Dankelman, I. (2008). "Mainstreaming gender in climate change policies: urgencies, challenges and perspectives". Paper presented at the Third Global Congress of Women in Politics and Governance on the theme of gender and climate change, organized by CAPWIP, Manila, The Philippines.

Neumayer, E. and Plümper, T. (2007). *The Gendered Nature of Natural Disasters: The Impact of Catastrophic Events on the Gender Gap in Life Expectancy, 1981–2002*. Retrieved from the World Wide Web: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=874965

Williams, E., Sorokina, O., Jones-DeWeever, A. and Hartmann, H. (2006). *The Women of New Orleans and the Gulf Coast: Multiple Disadvantages and Key Assets for Recovery. Part II. Gender, Race, and Class in the Labor Market. Part 2 of a 2-Part Series*. Institute for Women's Policy Research Briefing Paper. Retrieved from the World Wide Web: <http://www.iwpr.org/pdf/D465.pdf>

Women's Environment and Development Organization (WEDO), ABANTU for Development in Ghana, ActionAid Bangladesh and ENDA Senegal. (2008). *Gender, Climate Change and Human Security: Lessons from Bangladesh, Ghana and Senegal*. Retrieved from the World Wide Web: <http://www.wedo.org/files/HSN%20Study%20Final%20May%2020,%202008.pdf>

Assignments for this module:

Activity	Procedure	Time
Gender mainstreaming in adaptation planning and participatory approaches	Technique “National planning meeting on climate change adaptation”	40-60 minutes
Women's leadership related to existing adaptation initiatives suggested by participants	Technique “Q&A with gender advisor”	30 minutes

Case studies

Case study 1

Girls as leaders in community resilience in South Africa

In South Africa, the G.I.R.R.L. Project – “Girls In Risk Reduction Leadership” – aims to reduce the social vulnerability of marginalized adolescent girls in Sonderwater using practical capacity-building initiatives to increase individual and community resilience, including to disasters. The project is led by the African Centre for Disaster Studies.

Sonderwater is the poorest neighbourhood of Ikageng township, a peripheral township of Potchefstroom, North West Province of South Africa. Ikageng was originally designated as a “black only” settlement during the apartheid era. The already increasing frequency and impact of disasters in the wider African continent is exacerbated by underlying human vulnerabilities. In the past decade, Ikageng has been characterized by rapid expansion resulting in the creation of informal settlements like Sonderwater, in which the poorest residents live in inadequate sheet-metal houses without the most basic infrastructure such as running water, sewerage or electricity. Citizens and in particular adolescent girls, face growing poverty, crime, the prevalence of child-headed families, diseases (HIV/AIDS, STDs), drugs, alcoholism, lack of education, prostitution and domestic, physical and sexual abuse.

Social inequality puts women and girls at a distinct disadvantage even in the most

basic terms such as access to information, access to resources, limitation of movement and failure to understand survival methods during disasters. The project seeks to help incorporate girls and their perspectives into community-based disaster management and decision-making processes. The girls were selected based on the recommendations of school officials and local ward leaders. After being introduced to the project, the girls will participate in an extensive two-month training programme with instruction from specialists in areas such as personal and public health, fire safety, counselling and disaster planning. The culmination of the project will see the girls designing and hosting a community event where they will share their risk reduction knowledge with the other men, women and children in the community to design a plan for the community to reduce the impact of disasters. Gender is a central focus of the programme and therefore it was essential to integrate a gender approach into the project’s implementation, such as using women facilitators as role models.

With this initiative, girls have been empowered and encouraged to voice their opinions, will gain more confidence and respect, and will have more to contribute to their relationships, livelihoods, family and community. Twenty-five girls between the ages of 13 and 18 will be the first

direct beneficiaries. The programme is not designed to benefit these girls exclusively, but rather it is based on the premise of using them as facilitators to help promote information and provide “social services” to the community as a whole. The Sonderwater community of men, women and children (approximately 3,000 households) will be the recipients of the “team of leaders” and will work with these girls and the local disaster committee to develop an effective localized community-based disaster plan. Local government representatives will gain valuable insight into the risks facing their constituents. This knowledge can lead to better policies and support for future projects, leading to more cost-effective disaster reduction measures.

This project addresses the social vulnerability of women and girls in an effective, integrative, cost-effective, participatory, non-technical and easily replicable manner. Poor black girls in South African townships are challenged by cultural and social ideologies, which often rank them as inferior. The initiative’s methods look at why they are vulnerable – specifically physiology, lack of resources, limitations on access to information and nearly non-existent decision-making power. It acknowledges the complexity of external factors that contribute to vulnerability, but also provides practical, age-appropriate information and builds capacity. This capacity directly encourages and promotes the voices of these girls to be integrated into decision making within disaster planning but also gives them the foundation for building greater respect as equals within their

community. The practice does not seek to keep intelligent girls in isolation but to develop them as leaders, role models and facilitators to help improve the conditions of the men, women and children living within their community.

Adapted from:
International Strategy for Disaster Reduction. (2008).
Gender Perspectives: Integrating Disaster Risk Reduction and Climate Change Adaptation. Geneva: ISDR.

Case study 2

Gender roles in disasters in Pacific Island countries

Community consultations on disaster prevention in Samoa, Solomon Islands, Fiji and Kiribati revealed disparities in how women and men perceive and approach disasters and preparedness. The consultations were part of a study to improve understanding of the relative status, roles and responsibilities of women and men in Pacific Island households and communities, with the objective of designing more gender-inclusive strategies and programmes, and enabling women to be mainstreamed into disaster management programmes at local, national and regional levels.

Methodology

While the division of labour between men and women varies quite markedly within and between Pacific Island countries, the most significant fact about gendered roles revealed by this study is that a line is drawn in all countries between private versus public, or informal versus formal, authority. In all countries, with few exceptions, women are assigned the domestic sphere, making sure that everyone's physical needs are met and that children and old people are cared for; that there is enough water, fuel, food, bedding, mats, essential household goods and clothing; and that the house, household belongings and compound are clean. Men make decisions in the public sphere (*i.e.*, about relations between the family and other families, the extended family, the village, the district, the province

and the government). In Samoa, women have more public authority than in other countries, although this is confined to decision making within the defined women's sphere of water, health, hygiene, beautification and hospitality. However the increasing role of the state in providing water and sanitation services, and the growing centralization of health services, means that women's responsibilities in these areas are decreasing; water supply is gradually becoming incorporated into national infrastructure under the water authority, and these issues have shifted to the National Committee of *pulenu'u* (village mayors) monthly meetings with government agencies.

In Fiji, Solomon Islands and Kiribati, women's associations don't have much local authority, but some have considerable influence. They are typically community-based, linked to churches; often with affiliations to various NGOs. The male monopoly of decision making outside the home is a significant fact to be recognized for disaster management. Disaster prevention will be less effective because it will not address practical measures for household preparation. By including women in disaster management planning and decision making, better results will be achieved.

When men and women were formally asked who makes decisions about the use of household resources, such as labour allocation, goods and money, men were most likely to say that decisions were made by the (male) head

of the household. Women, in contrast, were most likely to say that husbands and wives made decisions together. In reality, if women's priorities are different from those of their menfolk, their priorities are less likely to prevail because they have less social and economic power.

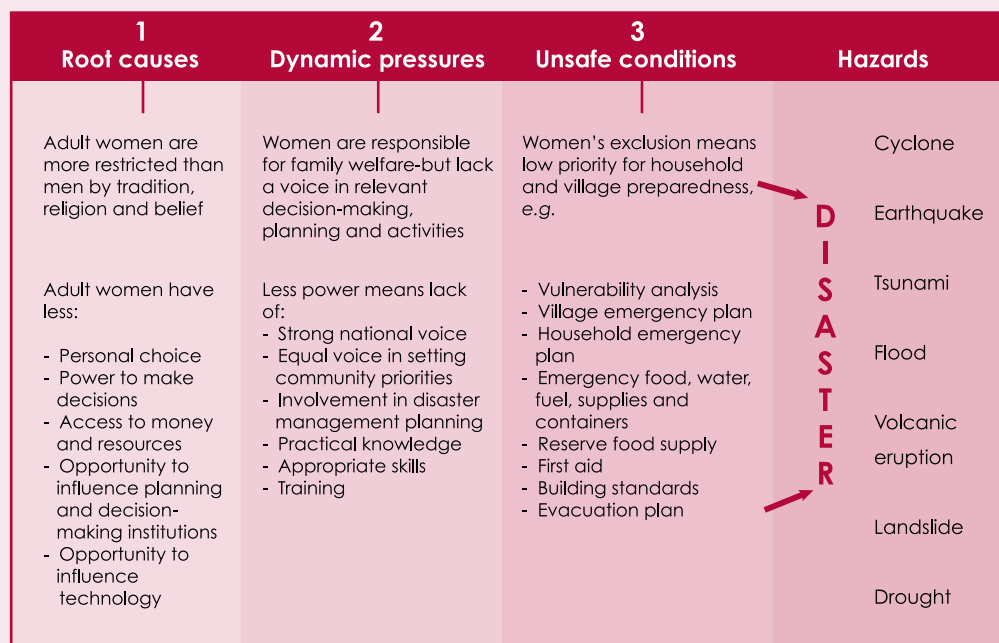
Most women knew that when a disaster warning was heard it was necessary to store food, fuel and water. However, when it came to the practicalities of how would enough of these commodities be obtained to last a week or two, where and how they could be safely stored, and how household possessions could be best secured, there were few answers. Knowledge of health risks and how to deal with them seemed limited. People in Kiribati died of dysentery, yet a simple and inexpensive treatment of oral rehydration therapy was available and few people had heard of it.

As summarized in the figure below, women's lesser social power increased household vulnerability to disaster.

Recommendations based on this study included:

- Men must be encouraged to recognize the need, and to support shared decision making on disaster preparedness with women;
- Women and men must both take part in community disaster management planning;
- National disaster management committees must include senior-level representation from national women's organizations, in order to increase emphasis on prevention and preparedness.

Adapted from:
South Pacific Disaster Reduction Programme (SPDRP). 2002. *Gender, households, community and disaster management: case studies from the Pacific Islands*. (SOPAC Technical Report 282). Resource presented at Gendered Dimensions of Disaster Risk Management and Adaptation to Climate Change in the Pacific Islands, AusAID and UNDP Pacific Centre Workshop, 20–21 February, 2008, Fiji.



Case study 3

Gender-sensitive strategies for adaptation to climate change: drawing on indian farmers' experiences

"If the rain comes in October (too late for ground nut) we can still sow horsegram. The cropping pattern is decided in consultation with the women, who always like to have some land for food crops."

"The food (millet) earlier was more nutritious, we consumed more milk and dairy products, and our diet was more balanced."

*Focus Group Discussion with men and women farmers (average land-holding 2 acres, rainfed)
Mittamalapalli Village, Madanapalle District, Andhra Pradesh*

Men and women in rural Andhra Pradesh, India are observing changes in the climate conditions they have come to know through years of farming; they report that temperatures are hotter and rainfall patterns are changing. At the same time and possibly related to this, the food they now eat is not as nutritious as it once was.

During conversations with these farmers about how they are coping with climatic changes, it becomes clear that men and women have different stories to tell. Men speak of migrating while women tell of new activities taken on at home. These accounts suggest that gender roles – the behaviours, tasks and responsibilities a society defines as "male" or "female" – shape the actions of women and men farmers in response to climate shifts.

To what extent does a farmer's gender influence his or her response to a climate shock? Is it possible that the impacts of climatic shifts on food security are different for men and women?

Little work has been done to answer these questions about the connection between gender roles and climate change adaptation, despite major international efforts to understand and reduce vulnerability of the poor and especially farmers to the risks of long-term climate change. Methods are needed to document what men and women know about climatic shifts and how they cope to ensure the food security of individuals and households. Tools are needed to incorporate the knowledge and needs of both women and men into strategies for coping with long-term change.

In collaboration with three Indian institutions (Samatha Gender Resource Centre (SGRC), Acharya N G Agricultural University (ANGRAU), and Suzlon Foundation], the Gender, Equity and Rural Employment Division (ESW) of FAO is conducting a research project in Andhra Pradesh to test the hypothesis that men and women are diversely affected by and cope differently with climate variability.

Locally engaged consultants with experience in the state and the ecosystem challenges are carrying out fieldwork in three districts collecting qualitative and quantitative data through

participatory approaches with farmers whose livelihoods rely on rainfed agriculture. This, combined with analyses of the institutional context and of recorded meteorological trends, is being used to document the climate risks men and women farmers are facing in ensuring food security and the strategies they are developing in order to cope with the new factors that now threaten their livelihoods.

The research is designed to develop a methodology for exploring the gender dimensions of coping with climate change impacts as well as to map new knowledge on how livelihoods are adjusted and how new coping strategies are developed for food security. The findings of this case study will be useful to FAO in its delivery of advice to policy and decision makers, who are at a crucial point in the climate change negotiations. The results will contribute to planning for adaptation to long-term change, which must be founded on men and women farmers' knowledge and work toward gender equality.

Source:

Dr Yianna Lambrou, Senior Officer
ESW FAO
Rome
yianna.lambrou@fao.org

Case study 4

The impact of hazards on women and children: Situation in South Asia

South Asia is a continent known to have the world's poorest population and to be highly prone to attacks by extreme natural forces due to its geographic location. Between 1990-92 Bangladesh alone was hit by three storms, four floods, one tsunami and two cyclones which killed more than 4000,000 people and affected another 42 million. This study analyses the impact of these disasters on women and children affirming that women and female children are more vulnerable in comparison to men. This study states it is nearly impossible for women belonging to already poor and vulnerable groups to bounce back once hit by extreme events. The result in the worst scenario is often women becoming destitute with their children. There are also many flaws in the legal system, and to make things worse, the majority of women who are illiterate or semi-literate, without financial resources find it nearly impossible to seek legal protection.

The high social values of marriage also play a big role in the impact of disasters on women. From the affected women's view point, their land and houses gradually being washed away by the river has denied or delayed the chances of their marriage. That delay in marriage in an overly suppressed atmosphere of a taboo-ridden society causes many psychological problems for the girls instigating feelings of worthlessness and self pity.

It is impressing then how living within these victimizing relationships, women in South Asia display enormous strength and capacity throughout the entire cycle of disasters; in preparation to face hazards, managing once the disaster strikes, and in rebuilding their damaged livelihoods. As observed in other case studies often it is only women, children and the elderly that remain in the villages trapped till the flood waters recede, or managing till the rains come in prolonged droughts. During calamities, taking care of the meagre belongings of the family, ensuring food and water for the family members, looking into the concerns of rebuilding livelihoods, securing the seed and other productive material, taking care of the sick and old are almost entirely done by women.

Source:

Madhavi Malalgoda Ariyabandu
Intermediate Technology Development Group
Paper Presented at "Reaching Women and Children In Disasters"

Laboratory for Social and Behavioral
Research Florida International University
U.S.A

June 2000

Available from the Gender and Disaster Network,
Northumbria University, Division of Geography and
Environmental Management:

http://gdnonline.org/resources/ariyabandu_paper.doc

Case study 5

Women will rebuild Miami: a case study of feminist response to disaster

This study focuses on women's role in disaster recovery, centred on the events that occurred in 1994 in Miami caused by Hurricane Andrew. The gender-based vulnerability of women to hazards is well documented (Wiest *et al.*, 1994; Blaikie *et al.*, 1994) but women's role in proactive work after disasters is less explored. They have been typecast as helpless victims, giving men the position of instrumental workers in the recovery of disaster. Gender relations in the late 20th century tend to place women in roles central to disaster recovery, based on their traditional community-building roles. Sociologists and social historians have documented women's history as activists on issues pertaining to the matter. Just as well, disasters may also break down the traditional infrastructure we know, leading to more visibility in their contributions to disaster relief. Women's voluntary efforts in disaster organizations make them central players in relief agencies, as is the case with the Red Cross.

Hurricane Andrew hit the southernmost part of Miami, Florida, on August 23, 1992, displacing over 180,000 people and destroying the supporting infrastructure for a population of 375,000. Every cultural group was affected. Human and social service agencies stretched their resources to assist in disaster recovery. This led to the foundation of *We Will Rebuild*, an elitist, male dominated, culturally misrepre-

sented relief group, which received much criticism for its approach, efficacy and management of funds. As a counterpoint, Women Will Rebuild emerged as a coalition of women's groups focusing on directing resources to the crisis needs of women and their families. The coalition which included at one point over 50 women's groups became a force rallying for the improvement of women's rights in the decision-making process for disaster relief. They achieved a slightly larger representation of women on We Will Rebuild's roster, as well as the creation of two new committees (*Families and Children*, and *Domestic Violence*) among other things.

Women Will Rebuild succeeded in uniting a wide range of women's communities around a single issue in a time of crisis. The coalition was however severely criticized by male-centred organizations as not being able to deliver, and having feminist values as part of the infrastructure which conflicted with their goals.

Source:

Elaine Enarson and Betty Hearn Morrow

Available through: Chapter 17 in Enarson and Morrow (Eds), *The Gendered Terrain of Disaster*. Downloadable at: <http://www.crid.or.cr/digitalizacion/pdf/eng/doc12898.doc12898.pdf>

National planning meeting on climate change adaptation

144



Objective: Explore ways to mainstream gender in adaptation planning through a participatory approach

Materials: Copies of one country's NAPA for each participant in small group, multiple sets of table tents with different roles, flip chart and paper for each group, marker pens

Procedure:

1. Divide people into small groups, assign them a country, and give them copies of that country's NAPA.

2. Assign people to small groups representing a country, with a different role for each participant handed out on a table tent:
 - a. Chair of National Climate Change Committee (this should go to a person who you think might be a strong facilitator)
 - b. President of Women's Rural Network
 - c. Minister of Women's Affairs
 - d. Minister of Environment and Energy
 - e. Informal sector worker
 - f. Director of "United for Forests" (NGO)
 - g. Director of National Health Institute
 - h. Agricultural Extension Agent
 - i. National Focal Point for UNFCCC
 - j. Journalist for National News

Table tent would read, for example: Journalist for National News/Malawi. Use these roles in priority order depending on how many participants per small group. Women and men participants can have any role, and in some cases it may be useful to assign a role to the non-traditional gender.

3. Ask everyone individually to read through the NAPA assigned to their group, from the perspective of the role on their table tent.
4. In small groups, discuss ways that women and men may be differently affected by climate change impacts in that country.
5. Brainstorm actions that could be taken by each of the roles in the group. On the flip chart, draft an implementation plan that incorporates everyone's roles.
6. Select a rapporteur to present the plans in plenary in their assigned role. Everyone displays their table tents and each small group presents.

Q&A with gender advisor

146



Objective: Demonstrate that women's leadership is central to effective adaptation strategies, and that incorporating a gender perspective in adaptation can be done in a streamlined way if needed.

Materials: Multiple flip charts, paper and pens.

Procedure:

1. In plenary, with a gender consultant on the team who can provide guidance, invite participants to describe briefly an initiative, programme or policy that they have worked on or heard about in adaptation-related sectors, for example in the areas of:

- a. Water and sanitation;
 - b. Biodiversity and ecosystems;
 - c. Agriculture and food security;
 - d. Coasts;
 - e. Desertification;
 - f. Energy;
 - g. Health.
2. After three to five of these have been noted (in one line on a different piece of paper on multiple flip charts so that all can be seen at once), facilitators or team members should engage in Q&A with the person who introduced each initiative, and brainstorm with the entire group on potential steps to incorporate women's leadership.
 3. If there is time, compare the cases and pull out general gender analysis principles.

Module 5:

Gender-sensitive strategies for mitigation actions

In wealthy countries, the looming climate crisis is a matter of concern, as it will affect both the wellbeing of economies and people's lives. In Africa, however, a region that has hardly contributed to climate change-its greenhouse gas emissions are negligible when compared with the industrialized world's-it will be a matter of life and death (Wangari Maathai, 2008).

Key messages

- Women are mainly absent from the international dialogue on mitigation;
- As regards clean energy sources and technologies, women's role can not be underestimated as they are main responsables for ensuring energy supply and security at the household level;
- Concerning carbon capture, fixing or sequestration, it is essential to highlight women's role in forestry;
- Sustainable consumption is a highly gender-sensitive issue as women make most of the consumer decisions.

The United Nations Framework Convention on Climate Change (UNFCCC) and its Kyoto Protocol are the foundation of the international climate change governance. The Kyoto Protocol committed industrialized countries to achieving a specific level of greenhouse gas (GHG) emissions reductions (averaging 5.2%) relative to a baseline (in most cases, 1990 levels) during the first commitment period (2008–2012).

As pointed out in IUCN's *Climate Change Situation Analysis* (Drexhage, 2006), Parties to the Protocol can reduce emissions of GHGs in whichever manner they choose, consistent with the terms of the Kyoto Protocol. They can count carbon sequestration activities in the land use, land use change and forestry (LULUCF) sector based on specific rules, and are also free to use international market mechanisms such as the Joint Implementation (JI), the Clean Development Mechanism (CDM) and International Emissions Trading as a means of meeting their Kyoto targets.

Over the longer term, the Intergovernmental Panel on Climate Change (IPCC, 2001) estimates that emissions reductions of more than 60% will be necessary to stabilize GHG concentrations at year 2001 levels. This will require a substantial “decarbonization”, including carbon capture and storage, of the global economy and a significant transformation of the systems used to produce and distribute energy, manufacture goods and enable transportation.

Other responses to the challenges of climate change are present in other international fora. For example the 15th session of the Commission on Sustainable Development (CSD), which concluded on May 2007, focused on progress in energy for sustainable development, industrial development, air pollution/atmosphere and climate change. The Chairman’s summary (CSD, 2007) stressed the need to provide energy for all; promote energy efficiency; strengthen the development, use and transfer of cleaner energy technologies; and promote international cooperation on climate change, including through both mitigation and adaptation. The summary also noted “the importance of mainstreaming gender considerations, in particular the role of women in management and decision making, at all levels, was seen as necessary for implementation of the interlinked issues of energy for sustainable development, industrial development, air pollution/atmosphere and climate change”.¹

5.1 Gender and mitigation efforts: establishing the connections

In the context of climate change, mitigation is “an anthropogenic intervention to reduce the sources of greenhouse gases or enhance their sinks” (IPCC, 2001). It is focused on limiting net emissions so as to slow and eventually reverse the rise in atmospheric concentrations of greenhouse gases.

There are certain areas in which mitigation actions are being proposed or undertaken, where women have proven over the years (and in some cases centuries) to be crucial players. Such is the case with conservation of forests and reforestation, management of local resources, consumption and energy, among others. In these proposed intervention areas for climate change mitigation, what has been lacking is awareness, recognition and acknowledgement of the role and input that rural and urban women from developed and developing countries have had and are having.

While there has already been some exploration of the links between adaptation to climate change and gender equality, the gender aspects of

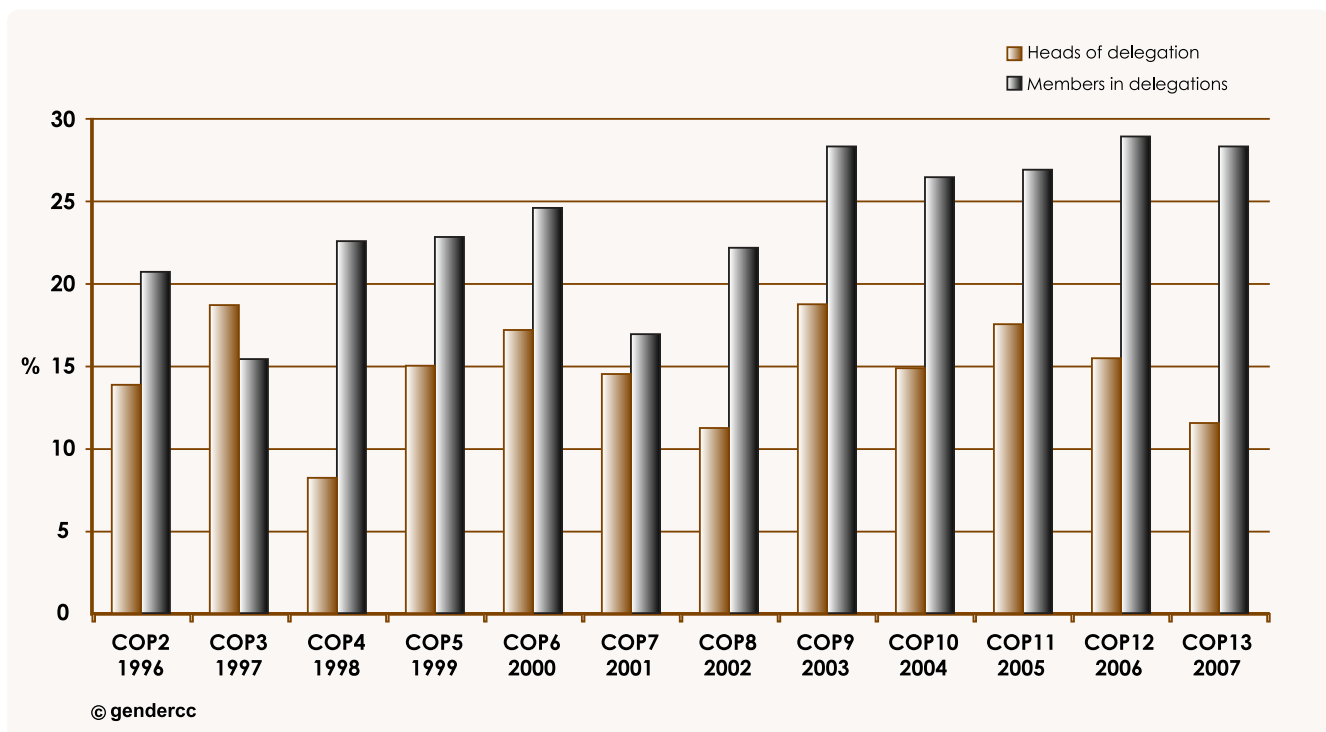
¹ 15th session of the CSD, Chairman’s Summary, Point 8.

mitigation are still at an initial stage. As pointed out by Brody *et al.* (2008) this may be due to the seemingly “technical” or “scientific” nature of mitigation, as being about reducing GHGs. It may also be due to the fact that women are often seen only as victims or members of vulnerable groups, rather than experts or leaders, and thus readily associated with the adaptation side of climate change.

Another fundamental explanation for the lack of gender considerations in mitigation (and in general in climate debates) is the fact that women are poorly represented in planning and decision-making processes in climate change policies, limiting their capacity to engage in political decisions related to climate change. As pointed out by Hemmati (2008), an indicator of women's participation in climate change debates at a global level is their share in State Parties' delegations as representatives or heads of delegations. Although a COP decision was taken in Marrakesh (2001) on promoting women's participation in UNFCCC meetings and the Secretariat, the participation of women in the official delegations is still limited, particularly as heads of delegation.

The figure below shows that although during the period 1996–2006 (COP 2–COP 13) the share of women in the COP delegations increased slightly (from 20.5 to 28%), the percentage of female heads of delegation actually dropped over the same period from 13.5 to 12%.

Figure 1. Share of women in the delegations of the parties



Source: Hemmati, 2008.

At the national level, the picture is similar. The integration of women is most likely to succeed at the regional and local levels, but even here, it is the exception rather than the rule. In this respect, there is a need to conduct actions that will empower women to get involved in decision-making processes (*i.e.*, training on climate change, access to information, invitation to participate in national discussion).

Actions associated with mitigation are grouped into two areas: reducing GHG emissions; and carbon capture, fixing and sequestration. In each of these cases the solutions or initiatives are different in developed and developing countries and, consequently, so is the way in which gender considerations are articulated.

Given their historic responsibility and differentiated economic development, mitigation actions are generally taken in developed countries and adaptation actions in less developed countries, with some notable exceptions. However, it is important to link these two aspects to confront the effects of climate change, as well as to relate them to combating poverty which is often the priority of least developed countries.

Fortunately, many elements of the necessary transformation can be accomplished in ways that contribute to broad development goals as well; for example, providing clean energy to women also improves local environmental quality. Approached in this way, the challenge becomes a less narrow and costly pursuit of environmental protection, and a broader effort to re-orient our societies and economies toward a sustainable development path.

Box 1 Linking adaptation and mitigation agendas

Effective linking of the mitigation and adaptation agendas should fit the best-practice/no-regrets approach – *i.e.*, actions will reduce emissions while helping countries/regions/communities to adapt to climate change through the use of best practices (including technology and know-how). Projects that effectively address conservation, sustainable livelihoods and natural resource management (*e.g.*, community forestry, pastoralism) will fit this description and create benefits on both sides. Decentralized renewable energy in rural areas also contributes both to mitigation and adaptation. We can expect to see a lot of activity in these areas in the next decade.

Source: Drexhage, 2006.

5.1.1 Carbon capture, fixing or sequestration

Initiatives or projects included in these types of measures are intended to increase storage of GHG by means of “sinks”. Sustainable agriculture, forestry (afforestation, reducing deforestation, and reforestation) and the conservation of nature come into play here. Unlike other mitigation strategies, these actions are primarily directed at the less developed countries, many of which have ecosystems that fix or capture carbon, for example, forests, mangroves and peat bogs, among others.

Within the complexity of the services that forests provide for climate change mitigation, it is crucial to understand women's role in these processes. Strategies are now turning towards: understanding and taking into account the different benefits that women and men derive from forestry services; recognizing gender differences in access to, control and knowledge of forest resources; and identifying the significant differences in access of women and men to forest-related decision making, institutions, and economic opportunities.

In relation to the **management or conservation of forests**, it is important first to understand that men and women often have different productive and reproductive roles with regard to forest resource management. They play different parts in planting, protecting or caring for seedlings and small trees, as well as in planting and maintaining homestead wood lots and plantations on public lands. Men are more likely to be involved in extracting timber and non-timber forest products (NTFPs) for commercial purposes. Women typically gather forest products for fuel, fencing, food for the family, fodder for livestock and raw materials to produce natural medicines, all of which help to increase family income. For example in south-east Cameroon, when the Baka people discussed their vision of the future, men and women turned out to have different visions. Women would like to have bigger community forests in order to be able to manage their own forests and harvest NTFPs – they are the ones who regularly go and gather food, wild fruits, roots, wild yams and also raw materials for making crafts/baskets/mats (Aguilar *et al.*, 2007).

Women's groups have also proven to be vital for the **conservation of forests** all around the world. In the Uttarakhand region of the Himalayas, the Chipko Movement comprises hundreds of decentralized and locally autonomous initiatives. Its leaders and activists are primarily village women. The Movement demonstrated that women can make a difference when protecting forests and developing afforestation projects. Their afforestation programme

not only reduced landslides, but also solved the problem of fuel and fodder. Women looked after the trees so carefully that the survival rate was between 60–80% (Joshi, 2007). Some of the other major achievements of the Chipko Movement have been: a 15-year ban on green felling in the Himalayan forests in Uttar Pradesh; a ban on clear felling in the Western Ghats and the Vindhyas; and greater pressure for a natural resource policy that is more sensitive to people's needs and ecological requirements.

Innovative agriculture can also play an important role in mitigation, especially, agroforestry. Agroforestry is widely regarded as an important approach to lessening the problems of environmental degradation and promoting rural development through using economic trees. However, agroforestry practices are also divided between women and men according to gender roles. For example, a study carried out in Nigeria shows women do not participate in all practices and perceptual differences concerning agroforestry practices exist between women and men (Aboh and Akpabio, 2008).

Box 2 India: carbon sequestration project

An innovative and gender-responsive agroforestry project in Gudibanda Taluk, Karnataka, India (implemented by the NGO Women For Sustainable Development [WSD]), supports local women and men farmers in planting mango, tamarind and jackfruit tree orchards for harvest and carbon sequestration. The project support women's participation in decision-making processes by taking into account women's special condition in respect of their cultural constraints and time schedule when establishing public forums. The project established a prototype carbon marketing facility to sell the certified emissions reduction of the global environmental services that the participating poor rural women and men provide. Because farmers have an average annual income of less than US\$100, they cannot afford to plant fruit trees without financial assistance. Success also requires expensive irrigation changes and planting tools. Since harvesting the crops is possible only about four years after planting, farmers will live on the carbon sales from their mango plantations until they harvest their crop. When fruit production starts one acre of crop will at least triple their annual income. The project lifetime is 35 years, with an estimated CO₂ benefit of 23 tons of carbon sequestration per acre. The project target is 35,000 acres, for a total sequestration of 575,000 tons of carbon.

Source: The World Bank, 2009.

At the COP-13 meeting in Bali, the Parties recognized there is an urgent need for developing countries to adopt significant measures to reduce emissions from deforestation, forest degradation and undertake afforestation initiatives.²

² UNFCCC, 2008.

For example, reforestation and afforestation have both been integrated as forestry-based mitigation schemes into the international climate change regime (*i.e.*, the Kyoto Protocol). Both practices entail converting non-forested land to forested land through planting, seeding and/or the promotion of seed banks and sources. Afforestation applies to areas that have not been forested for at least 50 years while reforestation applies to land that used to be forested but was turned over to another land use. Nowadays, there is a debate on the importance of addressing the reduction of emissions from deforestation and land degradation (REDD). Because it is estimated that close to one quarter of all GHG emissions are due to deforestation and similar types of land degradation, effective REDD strategies could be used to promote the protection of current forests.

Given that women play such an important role with respect to REDD, international negotiations or regimes that take REDD into account must be vigilant about compliance with international and national commitments on gender equality and equity; they must ensure, from the beginning, women's full participation and integration in national and international policy making and in the different applications of REDD.

In relation to payments for environmental services (PES), for carbon storage and new carbon sinks, there should be equitable access to, and distribution of, the economic benefits derived from forest services provided to mitigate climate change. Programmes should also promote equal access of women to land ownership and other resources necessary for effective socio-economic participation in forest management and climate mitigation strategies (*e.g.*, land, capital, technical assistance, technology, tools, equipment, markets and time). For example, both women and men must be trained in methods to increase carbon sequestration through new forestry technologies, including nursery techniques, site selection, and selection of species, land preparation, planting, weeding and maintenance.

When half of the population is not included or is prevented from participating in decisions, institutions and programmes relating to climate change mitigation, they are unlikely to feel "ownership" of forestry sector policies. Mitigation strategies represent a unique opportunity to include women in forestry programmes and acknowledge that gender relations will influence many aspects of forest management and governance proposed for reducing greenhouse gases.

Box 3 Gender considerations when promoting PES

Access and control over resources. Economic, social, cultural, political and legal environments affect the rights of women and men to control forest resources and own land. Even where women have ownership rights to land, their access to forest products and opportunities for forest-generated income may not be ensured. Different members of the community may have established informal rights to use different parts of the forest or even of a tree – women may have access to the leaves but not to the wood. This differentiation by gender has major implications for the ownership and usufruct rights to the forest and its by-products; it affects the decision-making process and its management. Therefore it is fundamental that PES systems take into account formal and informal land ownership aspects, in order to avoid reproducing traditional roles (giving benefits only to “male owners”). For example in Costa Rica funds given to the Ministry of Environment for PES were used to support women groups to buy land under their name so that they could benefit from the PES programme.

Knowledge base. Gendered knowledge may vary by class, age and ethnicity, underscoring its complexity. For instance, tribal women in India have been found to know medicinal uses for almost 300 forest species. In other parts of the world, an older man from an indigenous group may have different practices for the sustainable use of forest soil and trees than a young man living outside his native community. Understanding the wide spectrum of knowledge possessed by women and men in different socio-economic circumstances helps to determine appropriate and efficient forestry policies.

Decision-making structures. There is a need to ensure gender-balanced decision making to include women’s perspectives and concerns in the formulation, implementation and evaluation of policy decisions and outcomes related to PES. In order to achieve this, sometimes women will require the development of skills in order to fully participate (*i.e.*, teaching them how to speak in meetings).

Equal access to benefits. It is fundamental to ensure that there is an equitable distribution of the benefits derived from PES. Sex-disaggregated data should be collected in relation to budget allocations in order to identify the distribution of the funds.

Mitigation responses should avoid a narrow criterion that leads to environmentally and socially harmful consequences. These responses should have broad goals that aim to reduce climate change, protect natural resources, improve social wellbeing, promote equality, and recognize that women are key agents in climate change processes.

5.1.2 Reducing emissions through clean energy sources and technologies

In developing countries, especially in rural areas, there is a direct connection between energy supplies and gender roles. Currently, overall

GHG emissions are low in these areas because there is little access to electricity or motorized equipment outside the urban centres. Burning biomass for household cooking, heating and lighting represents a high percentage of many countries' overall energy use. For example, in Mali, firewood and charcoal account for about 80% of national energy consumption. Similar levels of reliance on biomass are found in other poor countries in Africa and Asia.

In these areas, providing the fuel needed for daily life is viewed as one of women's responsibilities. Where women are already managing traditional biomass energy supplies, they can also become key players in the adoption of energy technologies that reduce GHG emissions. It is important, however, that women are engaged in designing and implementing energy projects, and that proposed alternatives are affordable, accessible and designed to meet women's actual energy needs.

There are a number of cleaner fuels and/or more efficient energy systems that can provide win-win solutions by cutting emissions as well as indoor air pollution, which is a major source of respiratory diseases for women cooking over smoky fires. New energy alternatives also reduce the time and physical effort women need to expend collecting and transporting traditional biomass fuels, thereby creating new opportunities for education, productive activities and much-needed economic and social advancement.

Even in areas where grid-based electricity is available, many households still use wood or charcoal for cooking and heating. An approved methodology has recently been developed that will allow large-scale improved stove projects to access carbon financing through the sale of emission reduction

Box 4 Women and men use energy in a different way

Although decision makers may view their energy-related choices as gender-neutral, men and women are affected differently by energy policies wherever their home, work and community roles differ. For example, in Lao, energy is considered as dangerous and risky, in terms of the risks of electricity in private households and public facilities. Boys are expected to face and master these dangers. Whereas they are encouraged to get acquainted with electricity step by step, girls are kept away not only from electric power but also from the power of knowledge. Men are primarily considered to be responsible for the technical side and the investments in thermal insulation of homes, boilers, and hot water installations. Electrical installation, plumbing, and installation of heating systems are male domains.

Source: ENERGIA, 2007.

credits. By increasing the efficiency of fuel combustion, improved stoves have the potential to reduce carbon dioxide emission levels and also conserve increasingly scarce fuel wood. However, some past efforts to introduce new stove technologies have failed because they primarily emphasized environmental benefits and were not well suited to local customs. Engaging women in the design of improved stoves and implementation of projects will greatly increase the chances that the equipment will actually be used, and therefore the expected GHG reductions actually achieved.

Biogas digesters and solar cookers are other technologies that offer lower emission options for cooking and potential benefits to women – if they are compatible with women's daily routines and workloads, and adapted to the local context. Large-scale biogas digester projects have already been approved for funding under the CDM (see the Case study 3). Biogas digesters capture the methane gas released as agricultural waste, manure and other organic materials decompose; the gas is then piped to homes to be used for cooking and lighting. So far biogas digesters have been most popular in areas where people raise livestock, and there is plenty of water for processing purposes. Solar cookers have been most readily accepted in areas where land degradation and deforestation have made reliance on traditional wood fuels extremely difficult.

In areas beyond the reach of grid-based electricity, renewable energy options such as wind, solar and small hydrotechnologies provide alternatives to diesel engines and generators as low-emission sources of electricity and/or motorized power for essential equipment such as water pumps and grain mills. Since much of women's time in rural areas is spent getting water and preparing food for their families, motorized equipment greatly relieves the drudgery of their daily routines and increases the time they have available for other types of activities.

Production of liquid biofuels from plant products and waste materials may also offer new opportunities for women and communities to gain access to energy without adding to global carbon dioxide emissions. There is much controversy about the advisability and sustainability of creating large monoculture biofuel plantations, or using food crops for fuel, and in many cases it is women who will be most impacted by food insecurity and loss of access to land and resources for traditional biomass fuels. There are also questions about whether biofuel operations actually reduce GHG emissions when all the energy inputs required for large-scale operations are taken into account.

As a result, biofuel production has not yet been approved for carbon emission reduction credits. However, well planned, gender-sensitive policies on biofuel production have the potential to transform women's current roles as energy suppliers into sustainable livelihoods that trigger new advancements in rural development and self-reliance.

When women's groups are engaged in acquiring and operating new types of energy systems, they also develop new skills and livelihoods as business managers and energy entrepreneurs. In this way they can improve their own lives and economic opportunities while at the same time serving as active participants in the worldwide transition to environmentally sustainable energy production and consumption. So far, however, it has been difficult for the types of small-scale projects that women tend to be involved in to gain access to the CDM and voluntary carbon credit markets, especially in smaller countries. More work is needed to expand women's participation in these opportunities.

However reducing emissions through clean energy sources and technologies should not be focused only in developing countries. Women from developed countries also have a major role to play when it comes to the use of new technologies and use of energy resources for example, the introduction of more efficient and eco-friendly construction materials, electro-domestic appliances, bulbs, transportation tools and other technologies both in and outside the household.

5.1.3 Reduction of emissions: gender implications³

As to reduction of emissions, actions are intended to make developed countries become more involved since it is recognized worldwide that they are mainly responsible for GHG emissions. In this context, various organizations committed to promoting equality in these countries have analyzed the gender implications from two substantially dissimilar positions.

The first position is that there is little to be gained by taking gender as a basis on which to analyze responsibility for emissions. This group considers that, so far, no critical studies have been made about who is responsible for CO₂ and this makes it more urgent for different analyses to be made to identify social, political and planning conditions – in different ways in regions and countries – that affect the possible reduction of emissions (Wamukonya and Skutsch, 2002).

³ The discussion on point 5.1.3 draws heavily upon: Aguilar *et al.* (2008a). *Guía: Recursos de género para el cambio climático*. Mexico: UNDP.

The second position suggests that there are gender considerations related to emissions. A number of preliminary studies made in Europe, in particular one promoted by the government of Sweden (Johnsson-Latham, 2007), have investigated the differences between the “ecological footprint” of women and of men of different socio-economic levels, including their life styles and the contribution they make to GHG emissions.

For example, an analysis was made of the gender dimension in politics and transport – without doubt an important sector in mitigation strategies – and how emissions related to transport have a quite clear gender differentiation. Present transport systems have been designed with a stereotypical view of “middle-aged, full-time working men”, while neglecting women's much higher dependency on public transport even though more of them use it. For work and recreation, women travel by car less frequently and over shorter distances, use smaller cars with fuel-saving technologies and travel by air much less often than men.

Acknowledging the dissimilarity of the above-mentioned positions on emissions and gender, it has been proven that men and women have differing views and perceptions of climate change. In 2007, in Great Britain, a group of organizations launched the “Women's Manifesto on Climate Change” in which they suggest that the responsibility for emissions sometimes seems to be linked to the division of labour according to gender, economic power and men's and women's different consumption and recreation habits. The study also found that women are more concerned about climate change than men and advocate changes in lifestyles and consumption behaviour, whereas men favoured more technological solutions for mitigating GHG emissions (Women's Environmental Network and National Federation of Women's Institutes, 2007). The Manifesto asks the British Government to take environment mitigation and protection measures, and asks that this be done in a way that will ensure gender equality.

Carbon capture and development, and access to clean energy alone cannot lead to the reduction of greenhouse gases required to halt and reverse global warming, as regulation remains the form of mitigation with the most significant potential impact, if enforced.

As companies produce products and uphold practices that are most responsible for climate change and its gendered impacts, women must be leaders in the movement to set enforceable targets and regulations to curb GHG emissions.

In spite of the above-mentioned studies and examples, the theme of reducing emissions, and how it is linked to gender, is one of the areas that will need more research and analysis in the next few years.

5.1.4 Consumption: gender matters

In recent decades the global consumer class has been rapidly expanding, as the diets, transportation systems, and lifestyles of the world's wealthier nations spread out around the world. According to the Worldwatch Institute (2008), there are now more than 1.7 billion members of "the consumer class" – nearly half of them in the developing world. However, while the consumer class thrives, great disparities remain. The 12% of the world's population that lives in North America and Western Europe accounts for 60% of private consumer spending, while the one-third living in South Asia and sub-Saharan Africa accounts for only 3.2%.

The fourth *Global Environment Outlook: Environment for development* (GEO-4) report provided further cause for apprehension, showing that humans are overusing the Earth's ecosystem services at a rate that is outstripping nature's ability to renew and replenish them (UNEP, 2007).

Box 5 Definition of sustainable consumption

Sustainable consumption takes into account the social, economic, environmental and ethical dimensions of products and how they are produced as well as their ecological impacts.

As a result of the above, climate change mitigation solutions also need to engage consumers since they are key to driving sustainable production and play a central role in sustainable development.

According to studies conducted by the OECD (2008a and 2008b) gender has a huge influence on sustainable consumption (see Box 5), partly due to the differing consumption patterns of men and women:

- In some OECD countries, women make over 80% of the consumer decisions;
- Women are more likely to be sustainable consumers, e.g., they tend to buy eco-labelled or organic food, have a higher propensity to recycle and place more value on efficient energy than men; and
- Women pay closer attention in their purchases to ethical issues such as child labour and fair trade.

Hope to Action is a good example of what can be done by women in developed countries at the household level. This organization targets consumption patterns in the USA, taking into account women's role in consumer decisions. Their strategy consists of conducting "EcoSalons" which gather together women in their neighbourhoods and communities and provide practical advice on how to mitigate climate change through sustainable consumption (www.hopetoaction.org).

Therefore campaigns and education efforts directed at changing consumer patterns and incorporating principles of sustainable consumption, as a mitigation strategy to climate change, must consider women as one of the most important target groups. Additionally, women are still, in many countries, responsible for transmitting education and environmental principles to their children.

Further resources

Agarwal, B. (2002). "Participatory Exclusions, Community Forestry, and Gender: An Analysis for South Asia and a Conceptual Framework". *World Development* 29(10): 1623–1648.

Aguilar, L., Araujo, A. and Quesada-Aguilar, A. (2007). *Reforestation, Afforestation, Deforestation, Climate Change and Gender*. Fact Sheet. Costa Rica: IUCN.

Brody, A., Demetriades, J. and Esplen, E. (2008). *Gender and climate change: mapping the linkages*. UK: BRIDGE, Institute of Development Studies (IDS).

ENERGIA. (2007). *Where Energy is Women's Business: National and Regional Reports from Africa, Asia, Latin America and the Pacific*. Retrieved from the World Wide Web from: www.energia.org/csd_book.html

FAO. (2008). *Gender and food security: forestry*. <http://www.fao.org/gender/en/fore-e.htm>

Gurung, J., Lama, K. and Khadkha, M. (2006). *Empowered Women and the Men behind Them: A Study of Change within the HMG/IFAD Hills Leasehold Forestry and Forage Development Project in Nepal*. IFAD Case Study. Italy: IFAD.

Johnsson-Latham, G. (2007). *A Study on Gender Equality as a Prerequisite for Sustainable Development*. Sweden: The Environment Advisory Council Ministry of the Environment.

UNDP. (2007). *Gender Mainstreaming in Environment and Energy: Training Manual*. Retrieved from the World Wide Web from:

<http://www.undp.org:80/energyandenvironment/gender.htm>

UNDP and ENERGIA. (2004). *Gender and Energy for Sustainable Development: A Toolkit and Resource Guide*. Retrieved from the World Wide Web from:

www.undp.org/energy/genenergykit/genderengtoolkit.pdf

Assignments for this module:

Activity	Procedure	Time
Establish the connections between gender and mitigation efforts	Technique "Making the case"	60 minutes
Ideas for moving forward on mainstreaming gender in mitigation efforts/initiatives	Technique "Moving forward"	60 minutes

Case studies

Case study 1

Biofuel production in rural India

The CleanStar Trust project in India was born out of the pressing need to find environmentally sustainable livelihood options for the poor, who have traditionally lived off natural resources that are currently being affected by climate change. In order to ensure that the campaign's approach has the greatest impact on climate change mitigation, the project is using the voluntary standards developed by the Climate, Community and Biodiversity Alliance,⁴ which encourage the development of "projects that can ideally help counter climate change, promote sustainable development and conserve or restore biodiversity" (CCBA, 2005).

Central Maharashtra, in central India, is a drought-prone and landlocked region where natural resources are already largely depleted. The increasing scarcity of water, coupled with erratic monsoon patterns and severe erosion, have forced around 70% of the population into rural exodus, leaving farms abandoned and classrooms empty. Farm holdings are small and up to two-thirds of them are not fit for agricultural production; what arable land there is, is becoming less and less productive. As the agro-climatic and socio-economic situation worsens, more families are acquiring debts that they cannot afford. Over 1,200 desperate farmers have committed suicide in the last two years in this region.

According to the communities themselves, they need new livelihood opportunities that provide them with a stable income, are sustainable and can connect them to the fast growing markets. In 2004, a small group of alumni from Oxford University's MBA in Social Entrepreneurship started a field-based research project on sustainable biofuel production from tree-borne oilseeds on wasteland in central Maharashtra with the help of the local communities. After two years of trials, the team leaders, in collaboration with experts specializing in *Jatropha* and *Pongamia*, and dry-land farming, were able to establish a set of silvicultural practices related to the propagation of oilseed-producing trees, and began testing technological applications for processing the oilseeds into usable biofuels. By 2006, 100,000 trees were planted.

Instead of starting a for-profit organization, the group decided to use their knowledge locally to benefit the wider community. Today, CleanStar Trust incubates micro-enterprises at the village level to develop energy solutions by the poor for the poor. The campaign focuses primarily (but not exclusively) on planting biofuel trees (*Jatropha* and *Pongamia*) because they are one of the few things that can grow productively on the kind of land available, they do not displace or compete with food

⁴ The "CCB Standards" identify land-based projects that can simultaneously deliver compelling climate, biodiversity and community benefits. The CCB Standards are primarily designed for climate change mitigation projects. They were developed by the Climate, Community & Biodiversity Alliance (CCBA). The CCBA is a global partnership of research institutions, corporations and environmental groups, with a mission to develop and promote voluntary standards for multiple-benefit land-use projects. For more information about the CCBA, please visit www.climate-standards.org or contact info@climate-standards.org.

production, and the demand for energy in the region is very high.

CleanStar Trust creates community platforms where women, organized into Self-Help Groups (SHG), design and implement plans to generate new sources of income from existing resources through better management. These women's groups are in charge of managing their businesses as well. As a group, they own all the assets obtained during the incubation stage (trees and processing units).

Over the last three years, demand for non-edible oilseeds has picked up in the local markets (*mandis*), allowing the women's businesses to flourish. Government schemes to promote biofuel processing units have supported these businesses, as have private-sector investments such as a newly built biodiesel refinery in the target area. Most biofuel processors currently face a severe shortage of feedstock (both seeds and oil) for their units and are thus aggressively seeking suppliers. Women are developing businesses to meet these demands.

CleanStar Trust provides ongoing technical support to small business owners in the following areas:

1. Wild seed collection, involving training and logistical support for the collection, storage and sale of wild oilseeds to direct buyers.
2. Biofuel tree plantations, involving micro-loans and technical support for tree planting and watershed management while growing the trees. Funds are disbursed regularly until trees mature (three years), after which oilseed sales generate yearly income.

3. Oilseed processing, which involves using CleanStar Trust's capital and technical expertise to purchase and set up an oilseed processing unit. After processing (30% of the seeds), the oil is sold to local biodiesel processors, and seedcakes (the remaining 70%) are sold to locals as bio-coal briquettes, or bio-fertilizer to boost crop yields and displace fossil fuels like diesel and kerosene.

4. Agroforestry on wasteland, which involves supplying micro-loans for intercropping biofuel trees with fruit trees and hardy leguminous crops or fodder.

The project has gained the support of local authorities in the Beed District in central Maharashtra, and established partnerships with two local NGOs. In 2007, the United States Agency for International Development (USAID), the World Resources Institute (WRI) and the Confederation of Indian Industry (CII) declared the project to be number one amongst India's top ten sustainable ventures.

The goals for 2008 are to plant one million trees with 15 villages from the Beed District, and set up a nursery with 500,000 saplings to be distributed in the villages.

Sources:

Website: www.cleanstar.in/trust

CCBA. (2005). *Climate Community and Biodiversity Project Design Standards* (First Edition). USA: CCBA.

Case study 2

A billion trees for climate change mitigation

Wangari Maathai was awarded the Nobel Peace Prize in 2004 for the work she began in 1977, when she started the Green Belt Movement. By 2004, the movement had planted over 30 million trees that provide fuel, food, shelter and income to rural communities in Kenya.

In her Nobel Prize lecture she stated that when she initiated the Green Belt Movement in her native Kenya: “I was partly responding to needs identified by rural women, namely lack of firewood, clean drinking water, balanced diets, shelter and income.

Throughout Africa, women are the primary caretakers, holding significant responsibility for tilling the land and feeding their families. As a result, they are often the first to become aware of environmental damage as resources become scarce and can no longer sustain their families.

The women we worked with recounted that unlike in the past, they were unable to meet their basic needs... I came to understand that when the environment is destroyed, plundered or mismanaged, we undermine our quality of life and that of future generations”.

In May 2007, the United Nations Environment Programme (UNEP) established the *Plant for the Planet: Billion Tree Campaign*, a world-wide tree planting campaign inspired by the work of activist Wangari Maathai and backed

by Prince Albert II of Monaco and the World Agroforestry Centre (the International Centre for Research in Agroforestry (ICRAF)).

The Plant for the Planet: Billion Tree Campaign encourages the planting of trees in four key areas, namely: (i) degraded natural forests and wilderness areas; (ii) farms and rural landscapes; (iii) sustainably managed plantations; and (iv) urban environments. Trees have to be well adapted to local conditions, and mixtures of species are preferred over monocultures. Many trees have communal benefits, especially for the poor, and ownership, access and use rights are as important as the number of trees.

Carbon in forest biomass decreased in Africa, Asia and South America during the period 1990–2005. For the world as a whole, carbon stocks in forest biomass have decreased annually by 1.1 gigatonnes of carbon (equivalent to four billion 25kg sacks of charcoal). The loss of natural forests around the world contributes more to global emissions each year than the transport sector. Therefore, curbing deforestation is a highly cost-effective way to reduce emissions. Other solutions include increased energy efficiency, reduced energy demand, better transport and the use of green energy.

Trees absorb carbon dioxide and are vital carbon sinks. It is estimated that the world's forests store 283 gigatonnes of carbon in their

biomass alone, and that carbon stored in forest biomass, deadwood, litter and soil together is roughly 50% more than the carbon in the atmosphere.

Prof. Maathai recently stated that “natural resources will provide a buffer from the effects of climate change, and one of the most important activities we can and should undertake is to prioritize protecting and rehabilitating our forests; in particular, the five forest mountain ecosystems (in Kenya) that determine the flow and volume of our rivers, our rainfall, and our groundwater supplies.

Africa’s greenhouse gas emissions are negligible compared to those of the industrialized world and the emerging economic giants of China and India. But our responsibility to act should not be equally small. It is we who will pay the price for our inaction. Many of us already are, and the predictions of what is in store are sobering”.

Under the Plant for the Planet: Billion Tree Campaign, individuals, children, youth and community groups, schools, non-governmental organizations, business and industry, farmers, local authorities, and national governments are urged to plant trees as a small but practical step to combat what UNEP says is probably the key challenge of the 21st century. Pledges can be entered on the website: www.unep.org/billiontreecampaign. Each pledge can be anything from a single tree to 10 million trees.

“We know the science, we know the data [behind global warming]” said Prof. Maathai. “But what is really important is what we do. Planting a tree is something that anybody can do”.

Sources:

The Billion Tree Campaign website: <http://www.unep.org/billiontreecampaign/FactsFigures/QandA/index.asp>

Xan Rice. (2006). “Nobel Laureate Urges World to Plant a Billion Trees”. UK: *The Guardian*, 9 November.

Maathai, W. (2004). Nobel Prize speech.

Case study 3

Nepal National Biogas Project: reducing emissions while providing community benefits

This project promotes the use of biogas in Nepal for cooking and lighting in rural households by offering biogas units at below market cost. The project activities reduce GHG emissions by replacing current fuel sources (mostly firewood, dung and kerosene) with biogas produced from animal and human wastes. Only about 10–15% of people in the rural areas of Nepal have access to electricity.

In households with biogas units, women benefit through reduced time and effort in collecting and managing fuelwood supplies. They are also exposed to fewer of the health risks associated with indoor air pollution from smoky fires and kerosene lamps. The project estimates that women save three hours daily per household when they use biogas for cooking rather than collected firewood. Women report that they use the saved time in income-generating efforts, attending literacy classes, social work and recreation.

When households directly connect their latrines to biogas production units, they and their communities enjoy better health and sanitation. In addition, there are new employment opportunities connected with biogas digester production and distribution.

This was the first GHG emission reduction project in Nepal approved for financing under the Clean Development Mechanism. Developed by the Alternative Energy Promotion

Centre, the project is obtaining financing for subsidized distribution of the biogas units by selling a total of one million tons of GHG emission reductions to the Community Development Carbon Fund managed by the World Bank. The project estimates that each household biogas unit will eliminate close to five tons of carbon dioxide equivalent per year. Selling emissions reduction credits allows the project to generate long-term funding without seeking ongoing assistance from donors.

The country's dependence on fuelwood has contributed greatly to deforestation, so the project will also reduce pressures on the forests. In addition, waste slurry from the biogas digesters can be used as organic fertilizer, boosting food production and avoiding the expense of buying chemical fertilizers.

Sources:

<http://carbonfinance.org/Router.cfm?Page=CDCF&FID=9709&ItemID=9709&ft=Projects&ProjID=9596>

http://listserv.repp.org/pipermail/digestion_listserv.repp.org/2006-May/000418.html

Making the case



171

Objective: Understand the benefits of mainstreaming gender in reducing GHG emissions, and carbon capture, fixing and sequestration.

Materials: Copies of the training manual, marker pens, masking tape, flip charts and pins.

Procedure:

1. Prepare ideas, key questions and hints for each of the groups to support them in their work. Think about how you want to facilitate the final discussion and prepare some conclusions.
2. Divide the participants into five groups and assign them the following tasks:
 - Group 1 to look at point 5.1
 - Group 2 to look at point 5.1.1

- Group 3 to look at point 5.1.2
 - Group 4 to look at point 5.1.3
 - Group 5 to look at point 5.1.4
3. Explain that the assignment focuses on different aspects of the importance and intersection between gender and mitigation issues. Explain that the knowledge gained in the previous modules should be applied to this module. Give a short introduction pointing out the aims of the assignment. Explain that each group will discuss a different area, and they will be responsible for presenting the results of their discussions to the other groups in the plenary at the end.
 4. Appoint a leader in each group. Ask the participants to read their designated section of the module together with the case studies, and then to discuss them and prepare a “defence” based on the following questions:
 - What is distinctive about the role of women in this context?
 - What are the potential benefits of mainstreaming gender considerations?
 - What are the barriers?
 - What would be lost if gender considerations were not included?
 5. Ask the groups to write on a flip chart the results of their discussions on each question. Assist the leaders of each group in facilitating their discussions and in highlighting the key issues.
 6. Ask each group to present their “defence”. All group members can participate in this presentation. If possible, provide additional information on the key issues and possible ways of dealing with them.
 7. Allow the participants of the other groups to put forward questions and suggestions.

Moving forward



173

Objective: Identify possible actions to facilitate the mainstreaming of gender in mitigation efforts.

Materials: Copies of the training manual, marker pens, paper strips of four different colours (around 40 strips of each colour, depending on the number of participants), masking tape, flip charts, post cards (one for each participant) and pins. Write the following text on different-coloured strips:

Red: Reduction of emissions

Blue: Consumption

Green: Carbon capture, fixing or sequestration

Yellow: Clean energy sources

Procedure:

1. Paste the four different-coloured slips with the text on the wall or on the flip charts.
2. Give each participant strips of four different colours and pens so that they can write their inputs for each of the topics. Ask them to think of activities or areas which need to be studied or included in order to promote the incorporation of gender consideration into each one of the topics.
3. Allow 10 minutes so that the participants can write their ideas. Remind the participants to limit their input to one idea per slip of paper, written in such a way that everyone can read it.
4. Ask one of the participants to start reading and pasting up their ideas for the first topic. Then go round the other participants asking them to paste up their answers. If some participants have the same idea, they will “pass”. Allow time at the end to discuss if there is anything missing.
5. Do the same for the remaining three topics.
6. Finally, ask the participants to commit themselves to implementing one of the ideas when they return to their workplaces. Distribute post cards so that everyone can write down their commitment; they should include their names and addresses. Tell them you will post the cards in three months' time as a reminder. Ask if anyone wants to share their commitment with the rest of the group.

Module 6:

Gender-sensitive strategies on technology development and transfer to support actions on mitigation and adaptation

Technologies are at best a partial solution, sometimes they are even part of the problem. In order to contribute to the goal of climate change mitigation and adaptation, technologies must be embedded in broader activities related to capacity building for users of the technologies and for decision makers who have to create the institutional environment. This is particularly important regarding women's technological needs. Additionally, technologies should be properly adapted to women's needs (Women for Climate Justice, 2007).

Key messages

- Gender analysis is a necessary component of climate change technology policy;
- Women should be present in climate change decision-making boards and bodies;
- Climate change technology funding mechanisms must make specific efforts to promote the development of gender-sensitive technologies;
- Every aspect of technological intervention including needs, information, enabling environments, capacity building and technology transfer has a gender component which will affect its final outcome;
- Both mitigation and adaptation technologies will have different impacts on men and women and it is necessary for this to be recognized by technology planners and designers.

6.1 What do we mean by technology?

During the 20th century, the word “technology” evolved from meaning simply a tool or machine to a much broader concept that also includes knowledge, processes, activities and socio-cultural context. Although the word still evokes notions of tools and machines, technology is understood to be a foundation of everyday life and touches most aspects of both women's and men's lives. For example, the global growth in the use of information

communications technologies, including cell phones, over the past two decades, has changed the way that human beings communicate.

Technology is never gender-neutral. Men and women have different attitudes to and relationships with all aspects of technology. Technology in the traditional sense of tools and machines has been considered a “male domain” and it is only in recent years that girls and women have been encouraged to pursue studies in mathematics and engineering.

Despite their ingenuity and ability to improvise with whatever materials they happen to have at hand, women in most parts of the world are highly under-represented in the formal creation of new technologies. However, in all parts of the world, women are active users of technology. Women's specific needs in technology development, their access to technical information, tools and machines often is very different from that of men. All of this influences how (and if) they will have access to, or make use of, new technologies.

Cultural patterns are also important. For example, among some pastoral communities, water points are managed by men (who are mainly concerned with providing water for livestock – a source of income and prestige for them). These water points often have no taps for women to draw domestic water with the result that women are forced to collect water at the cattle troughs being used (and contaminated) by the animals.

6.2 What does technology have to do with climate change?

The United Nations Framework Convention on Climate Change (UNFCCC) positioned clean technologies at the centre of global responses to climate change. Clean technologies will help to estimate, monitor and control the environmental and human impact of climate change but to be truly effective, these technologies must be gender-sensitive both in terms of

Box 1 Technology is not gender-neutral

In many developing countries, girls' and women's access to information and communication technology is constrained by:

- Social and cultural bias.
- Inadequate technological infrastructure in rural areas.
- Women's lower education levels (especially in science and technology) and fear of or lack of interest in technology.
- Women's lack of disposable income to purchase technology services.

Source: World Bank, 2004.

conceptualization and use. Within the context of UN commitments to gender mainstreaming, persistent efforts must be made to ensure that gender sensitivity is integrated into the development, transfer and use of climate change technology.

A number of UN mechanisms and frameworks address climate change and technology. For example, the Global Environment Facility (GEF) is the financial mechanism of the UNFCCC and allocates and disburses about US\$ 250 million dollars per year to projects in energy efficiency, renewable energies, and sustainable transportation. The projects support measures that minimize climate change damage by reducing the risk or the adverse effects of climate change. GEF also has a small grants programme which includes gender equity as a reporting category, but it is usually given minimal attention. To date, the GEF has overlooked the degree of difference in the impact of climate change on women and men.

At the 7th Conference of the Parties in Marrakesh in 2001, the UNFCCC adopted a technology framework and established an Expert Group on Technology Transfer. This expert group has responsibility for advancing the development and transfer of technology activities under the Convention. It oversees the development, deployment, adoption, diffusion and transfer of environmentally sound technologies to developing countries, taking into consideration differences in accessing and applying technologies for mitigation and adaptation.

The Clean Development Mechanism (CDM), which emerged from the Kyoto Protocol, allows industrialized countries to invest in projects that reduce emissions in developing countries as an alternative to more expensive emission reductions in their own countries. The CDM includes a provision for small-scale activities and offers potential for the transfer of a range of technologies to women in the South. It offers a good opportunity to recognize and build on the small-scale technologies that women are already using, in household energy, agricultural and food processing, forest management, water pumping, etc., in rural areas, and energy appliances and processing equipment in peri-urban areas (Wamuknoja and Skrutch, 2001).

In addition it is important to point out that innumerable studies have proven the irrefutable fact that equal inclusion of women and men in all aspects of climate change projects pays off. For example, a World Bank review of 121 rural water supply projects found that women's participation was among the

variables strongly associated with project effectiveness. Furthermore, it was found that the failure to take gender differences and inequalities into account could result in failed projects (Narayan, 1995).

Based on the information on its website, the CDM appears not to have given any consideration to the gendered nature of technology. Women are not highly visible in climate change technology decision making. In late 2008, two of the 19 members of the UNFCCC Expert Group on Technology Transfer were female and the executive board of the CDM consisted of 10 members, nine of them male. While the participation of women on climate change technology boards and committees will not in and of itself ensure attention to gender equality, it is a necessary starting point. When there are only one or two women on a board, they are unlikely to press for the inclusion of gender equality issues for fear that this would receive little general support, but when a critical mass of 30% or higher is reached, then it is more likely that such issues will be raised. However, it should also be pointed out that not all women are necessarily familiar with gender equality issues, thus efforts should be made to include female board members who can explicitly address gender equality issues and represent an empowerment approach.

6.3 What does climate change technology have to do with gender?

Because technology is not gender-neutral, technology-based strategies for both mitigation of, and adaptation to, climate change sometimes have different implications for women and men. These differences must be recognized and integrated into our thinking about climate change. If technologies are to be used by both men and women, they must be designed to reflect the circumstances and preferences of both sexes. This is especially true in the case of technologies aimed at tasks most frequently performed by women. While the participation of women in decision making about technologies will not guarantee gender sensitivity, it is an important aspect, and ultimately may help to make the technologies more useful and productive for both men and women.

There are many examples, especially in the agricultural sector, of technologies designed specifically to reduce the heavy workloads of rural women but developed without their input and which ultimately were not

successfully adopted (see Box 2). Technologies have often been designed without attention to the specific needs of women and their limited access to resources, including capital, labour, time or even the right to make decisions. In developing countries, new technologies are usually transferred through agricultural extension systems staffed by male officers who are more comfortable working with male farmers. In some cases, local cultural norms make it difficult or even impossible for male extension workers to interact with female farmers. Consequently, women farmers often do not receive information about new technologies and men obtain most of the direct benefits from their introduction. This is not only unacceptable from the perspective of gender equality, but it is also highly inefficient, given the significant role played by women in agriculture in most developing countries. Focused efforts must be made to involve women in the processes of developing, testing and implementing new technologies. Women must also be employed in the agricultural extension systems, helping facilitate the transfer of technologies and knowledge to rural women.

Box 2 Impact of land tenure on the adoption of new technologies in Kabale District, Uganda

The NGO Africare in Kabale District recommended practices to reduce run-off on the steeper slopes in the area by improved terracing and planting of bushes and vetiver grass, but women were reluctant to adopt such technologies since they lacked secure tenure to the land. Men had such tenure, but many farm households were *de facto* female-headed since the men were not present. Meanwhile, the women on their own were unwilling to adopt such technologies. Consequently, the rate of adoption was very low. There was a similar problem with tree planting and women were reluctant to plant fruit trees on land where they had no tenure. The issues were resolved through discussions between project staff and the communities (either with the husband when possible, or with the village elder, and with the wife) by explaining the purpose of these investments, and the resulting benefit for the household and the community.

Source: World Bank, 2004.

6.4 Areas of focus for technological interventions

Article 4.5 of the UNFCCC states:

The developed country Parties and other developed Parties included in Annex II shall take all practicable steps to promote, facilitate and finance, as appropriate, the transfer of, or access to, environmentally sound technologies and know-how to other Parties, particularly developing country Parties, to enable them to implement the provisions of the Convention. In this

process, the developed country Parties shall support the development and enhancement of endogenous capacities and technologies of developing country Parties. Other Parties and organizations in a position to do so may also assist in facilitating the transfer of such technologies.

During COP-7, the Parties adopted a framework for meaningful and effective actions to enhance the implementation of this article, identifying the following five areas for attention. Each of them can be implemented in a gender-sensitive manner, as is discussed below:

6.4.1 Technology needs and needs assessment

Technology needs assessment exercises should begin from the recognition that the technology needs of men and women are not always identical. For example, in agriculture there is often an emphasis on the development of drought or flood-resistant varieties, to increase food security. However, in many developing countries, processing agricultural products is a time-consuming and laborious task undertaken almost entirely by women. Given the time constraints under which women already operate, it would be appropriate to focus on developing varieties that will be easier to process and to invest in the development of appropriate tools for women such as simple threshing instruments, in addition to the identification of technologies that will lead to an increase in yields. Technology needs assessment should give some consideration to the end users who are often female farmers who face constraints of time, access to credit and information, and poor or marginal land.

In industrialized countries, increased attention is being given to the development of more fuel-efficient automobiles. While both men and women own cars, especially in the North, overall car ownership is skewed towards men (Wamukonja and Skrutch, 2001) and women are more dependent on public transport. A women-friendly transportation system may focus more on creating schedules that are convenient for women's needs or on providing economic incentives to users of public transportation systems. Similarly, in industrialized countries, women typically earn less than men and their technological choices often are constrained by income, especially in the context of female-headed households. For example, women may find it harder to pay the cost of converting home heating systems to cleaner, low-carbon choices and attention should be given to finding low-cost alternatives that will be affordable for lower-income households.

6.4.2 Technology information

Existing traditional channels for the dissemination of technical information, e.g., agricultural extension systems, often bypass women and special efforts may have to be made to reach them. Male family members do not necessarily share newly-acquired technical information with women, especially if women are farming their own rather than their husbands' plots. Thus, it may be necessary for agricultural extension systems to hire female employees who are able to communicate information directly to women, rather than expecting it to reach them through male family members. Gender should be mainstreamed into agricultural extension services and efforts should be made to create awareness, sensitize and train all existing and upcoming extension workers on gender and climate change's new technology concerns. Other media should also be used to impart technology information to women, especially radio and, increasingly, television.

Box 3 Empowering women: promoting skill transfer through ICT

Community initiatives that train women in ICT skills can and do change women's self-perception as well as community perception of women. The critical thing here is to link women's skills in Information and Communication Technology to community needs – the M S Swaminathan Research Foundation experience in Pondicherry, and Tilonia Barefoot College that trains men and women to use GIS for water management, testify to how women trained in ICT not only play a useful role as change agents, but are able to spiral into a personal empowerment trajectory.

Source: Gurumurthy, 2005.

In industrialized countries technical information about climate change is often presented in an abstract, highly technical way that is not easily understood by the general public. Research on women's learning styles has shown that they are more responsive to technical information when it is presented within a social context, making it important that technology information be presented in an accessible, contextual style that resonates with women.

6.4.3 Enabling environments for technology transfer

Creating an enabling environment for technology transfer requires adequate technical, business, management and regulatory skills. Participation of all stakeholders including the private sector, public agencies, NGOs and

grassroots organizations, is important for effective technology transfer (Sathaye, 2002). Women should be physically present in these groups, and their opinions and input should be actively solicited. In some cases it may be necessary to speak with women separately as it may be culturally inappropriate for them to speak publicly in the presence of men.

6.4.4 Capacity building for technology transfer

Similarly, capacity building for technology transfer must provide equal opportunities for both men and women to receive training, information and opportunities for participation in study tours and jobs. Efforts must be made to ensure women have access to credit, training and skills-building opportunities.

6.4.5 Mechanisms for technology transfer

Mechanisms should include gender-sensitive methodologies and organizational innovations that are developed after consultation with wide representation from all intended users, and after soliciting user input into all planning and priority-setting processes.

6.5 Mitigation technologies: the gender dimension

A key objective of climate change mitigation strategies is the reduction and/or sinking of greenhouse gas (GHG) emissions. Global carbon emissions from fossil fuels are caused primarily by industry, buildings, transport and agriculture and these are strategic sectors that must be targeted to reduce GHG emissions.

Energy is a particularly critical area and renewable energy is often cited as a key mitigation technology. Increased attention is being given to the use of biofuels, although biofuels have long been used as an energy source by women in areas with sparse forest resources. The growing emphasis on biofuels has implications for women in developing countries both because there is increased competition for available biofuels and because agricultural land formerly used for food production is being diverted to growing biofuels (e.g., maize, sugar cane, etc.). Energy crop plantations typically require large amounts of water and often draw on local water sources that are already meagre. As a result, women have to expend even more time and energy in collecting water for household needs while they do not necessarily benefit from the proceeds of plantation energy crops (Rossi and Lambrou, 2008).

A study of 19 countries in Africa and Asia found that traditional biomass fuels such as wood, charcoal and agricultural residues are usually managed by women and often represent a high proportion of national energy supplies. For example, in Mali, firewood and charcoal, used mostly for cooking, represent 80% of the country's energy consumption and women spend more than one-third of their time collecting wood (Karlsson, 2008). Thus, identifying appropriate alternative energy sources is not only important for the environment; it is also key to reducing women's workloads.

Numerous energy solutions at the community level already exist, including improved cooking stoves, biogas, low-grade solar energy systems, micro-hydro power and wind energy. These have often not been widely disseminated or have been priced at levels that are too high for poor households. There is an urgent need for further work to be done on these technologies to make them affordable, adaptable and easily accessible for rural women. Sustainable energy development as a response to climate change is a yardstick for the socio-economic advancement of women (Makhabane, 2002).

Water resource use is another area that requires gender-sensitive mitigation strategies. Since women in developing countries usually bear primary responsibility for the collection of water for domestic purposes, technologies aimed at improving water-use efficiency should have a gender component. For example, if more efficient hand pumps or irrigation systems are being designed it should be considered whether they will be accessible and affordable for rural women. Since women are already key users of natural resources, they should be empowered to participate in wetland restoration as a means to improve water quality and decrease risks of flooding. Similarly, their input should be sought in the development of soil erosion strategies.

Box 4 Locally-based sustainable energy production

In Ghana, GRATIS (the Ghana Regional Appropriate Technology Industrial Service) has promoted the production and use of jatropha oil to produce biodiesel in the West Mamprusi District. Women's groups have been encouraged to establish and manage jatropha crops, harvest and process the seeds, and produce biodiesel, which they use for powering shea butter processing machines, grinding corn and in household lanterns (www.gratis-ghana.com). In Tanzania, KAKUTE Ltd (Kampuni ya Kusambaza Teknolojia) has supported the production of jatropha seeds for sustainable livelihoods and rural bio-enterprises. KAKUTE trained several hundred people to farm jatropha as a cash crop on marginal lands, working with village-based women's groups to produce seedlings and cuttings for planting. The oil extracted from the seeds is used in hurricane lamps and stoves provided by the project, but less expensive stoves are needed to make this use affordable (www.jatropha.de/tanzania/Kakute/kakute.htm).

Source: Karlsson, 2008.

Reforestation projects are also being advocated as a means of mitigating climate change. Since 1977, Kenya's Green Belt Movement has involved more than 30,000 poor rural women in reforestation activities and has planted more than 30 million trees. Women use the trees as a source of fuelwood and learn skills in forestry, food processing and bee-keeping which have become sources of household income.

When mitigation technology projects are designed from a gender equality perspective, they can serve various purposes: contribute to climate change mitigation, lighten women's workload, become a source of income generation, etc. (see Box 4). To make the case that such community-level energy solutions are environmentally friendly, efficient and economically beneficial for women (and men), it is necessary to develop methodologies and dissemination strategies that specifically address women's participation, access and derived benefits. It is also important to strengthen the capacity of smallholder farmers to participate in biofuel production through better access to land, capital and technology, for example through the establishment of cooperatives (Rossi and Lambrou, 2008).

6.6 Adaptation technologies: the gender dimension

Adaptation involves a range of activities to reduce vulnerability to climate change. Poor women in rural communities are often particularly exposed because they rely on local water, fuelwood and agricultural land for their survival. Most methods of adaptation involve some form of technology. This can include "soft" technologies based on insurance schemes, crop rotation patterns or traditional knowledge. It may also include "hard" technologies like irrigation systems, drought-resistant seeds or sea defences. Early warning systems, for example, are usually based on a combination of "soft" and "hard" forms of technology (UNFCCC, n.d.). In order to be effective, adaptation technologies need to reach those who are most in need – the poor and vulnerable. Women are often over-represented in these categories therefore targeted efforts must be made to ensure firstly that it is understood that the situation of women may differ from that of men, secondly that technologies are designed in such a way as to be relevant to their circumstances and thirdly to ensure that they are given full access to knowledge, information and technologies related to adaptation.

In the area of agriculture, efforts are being made to produce new crop varieties that will be resistant to increased flooding, drought and salinity. In many countries, women habitually preserve seeds, and their knowledge and expertise should be brought into the crop breeding process. Flood-prone countries are

focusing on the development of better surveillance systems for improving early warning systems for storm surges and floods. Again, it is necessary for such systems to be structured in a way that will ensure the poorest receive information in a timely manner and that they are given assistance to develop coping strategies.

In industrialized countries, the gender impacts of adaptation technologies may appear to be less distinct, but there are several important factors to consider. First, women tend to be under-represented in climate change decision-making bodies. Secondly, their consumption patterns may differ from those of men. Thirdly, their attitudes towards environmental sustainability sometimes differ from those of men. For example, nuclear energy is often advocated as an adaptation strategy to reduce dependency on fossil fuels. A Swedish study in the late 1990s found that young men were much more likely than young women to favour the long-term use of nuclear energy. Women against the use of nuclear power identified safety issues as their major concern (Puranen, 2000, cited in Clancy *et al.*, 2004). Men were much less likely to object to nuclear waste being stored in their community. Interestingly, the higher women's educational level, the more likely they were to object to the use of nuclear energy while the reverse was true for men.

European women's negative attitude towards nuclear energy was highly influenced by the Chernobyl disaster of 1986, which led to fears about both the environmental and the health risks of nuclear power. Similarly, in the USA, Culley and Angelique's analysis (2003) of the influence of the Three Mile Island nuclear accident on women's activism, suggested that they were initially spurred towards protests because of their perception of negative health and safety aspects of nuclear energy. Men were more likely to be convinced by the economic arguments in favour of nuclear energy. Overall, it is clear that attitudes are different and it is necessary for governments to recognize this when designing or approving appropriate climate change technologies.

In the North, the rising costs of energy, food, transport, health care, etc., have a greater impact on women, especially those in low-income households. There is a need for gender-sensitive research on the consumption patterns and attitudes of men and women, but since women as a whole have lower incomes, it is evident that adaptation technologies for them must be both cost-effective and accessible.

Finally, in the area of both adaptation and mitigation strategies, there is a need to recognize, record and value local knowledge and to blend it with scientific research. For example, in many cultures in Africa, Asia and Latin

America, women preserve seeds for future use. They have a profound knowledge of local biodiversity and of indigenous strategies for seed management during times of drought or flood. They also have an understanding of medicinal plants and herbal remedies. This knowledge should be seen as an integral part of the solution to climate change and should be valued as such by both scientists and policy makers.

Further resources

Karlsson, G. (2008). *“Engaging women in small-scale production of biofuels for rural energy”*. Presentation summary for Stockholm Environment Institute side event at WIREC: North-South-South Forum on Biofuels, Climate and Sustainable Development. ENERGIA. Retrieved from the World Wide Web from: http://www.energia.org/pubs/papers/2008_karlsson_sei-wirec_pres-sum.pdf

Sathaye, J. (2002). *Climate change mitigation: barriers, opportunities and technology transfer*. USA: Lawrence Berkeley National Laboratory, University of California. Retrieved from the World Wide Web from: <http://72.14.205.104/search?q=cache:vODISqDFQJAJ:ies.lbl.gov/ppt/ccmbott.pdf+what+are+climate+change+mitigation+technologies&hl=en&ct=clnk&cd=9>

UNFCCC. (n.d.). *Fact sheet on technology*. Retrieved from the World Wide Web from: http://unfccc.int/files/press/backgrounders/application/pdf/fact_sheet_on_technology.pdf

Wamukonja, N. and Skrutch, M. (2001). *“Is there a gender angle to the climate change negotiations?”* Prepared for ENERGIA for distribution at CSD-9, New York. Retrieved from the World Wide Web from: http://www.energia.org/pubs/papers/wamukonya_skutsch.pdf

Assignments for this module:

Activity	Procedure	Time
Gendered nature of technology	Technique “What “technology” means to you”	30 minutes
Gender analysis in mitigation and adaptation technologies	Technique “Analysis of a case study”	60 minutes

Case studies

Case study 1

Climate change and gender equality in China

One of the goals of the Canada-China Cooperation in Climate Change (C5) Project (funded through the Canada Climate Change Development Fund (CCCCDF) and administered by the Canadian International Development Agency (CIDA)) is to increase the contribution of women by empowering them to participate equally in the development and implementation of climate-change-related policies and programmes, particularly within Chinese government agencies and research institutions. Specific objectives include:

- Increasing awareness of gender inequalities and support for women's full participation in decision making and technical activities associated with climate change;
- Increasing the capacity to analyze gender equality issues relevant to the project and incorporate the results of the analysis into project activities;
- Developing and implementing appropriate targets for male/female participation in project activities, based on sex-disaggregated baseline research; the minimum expectation is 30% participation by women; and
- Increasing the awareness, abilities, self-confidence and motivation of women working to address the issue of climate change.

CIDA also funded the Canada-China Cooperation Project in Cleaner Production, targeting emissions in the pulp and paper, fertilizer, plastics and brewing industries. The project contained a specific component to increase the participation of women as workers, technicians and managers. Women received training in process improvement, auditing practices, monitoring of equipment, computers, and other technical aspects of their work. At the same time, gender equality awareness sessions began to transform the attitudes of both men and women. Women not only applied the new clean-production techniques at work, they started taking initiatives on their own to help clean up the environment.

This project has been the catalyst for the creation of a new organization: Women and Environment Network (WEN).

Source: www.cccsu.org.cn

Case study 2

Women's vulnerability in the rural communities of Keur Moussa

The rural communities of Keur Moussa are located between Dakar and Thiès, and comprise 37 villages, most of which are on the Ndiass single-wall buttress. The Ndiass is a plateau with a maximum elevation of 120 m. Surrounded by massifs, the villages and their surroundings are exposed to fast-running surface water because of the steep slopes. Water erosion is a serious problem here and has drastic consequences on the environment (resource degradation, soil acidification, gully erosion, absence of water infiltration) and on the communities (fatal accidents, the collapse of housing, inaccessibility to resources).

Women have difficulty accessing water, and also have all sorts of problems with agricultural production. They are unable to grow vegetables out of season. Arable land is being lost due to soil degradation, and the arable land that is available, is often infertile due to surface water flows uprooting vegetation and crops. Therefore, agricultural yields diminish and earnings dwindle. Young people migrate and leave women and the elderly to fend for themselves. In the villages of Landou, for instance, there are about 118 women and only 20 or so men.

The steepness of the slopes means that it is very difficult for the surface water to soak into the ground to replenish groundwater supplies. This exacerbates water shortages especially in the areas where wells have already been dry for two months during the winter season. In some

places around the massifs, the ground water is 30 m below sea-level (Ndiaye, 2007), thus contributing to the intrusion of salt water and the breakdown of hydraulic equipment such as drilling machines.

Some organizations have helped the women control erosion in order to retain water and soil, and to recover arable land to achieve better agricultural yields. They have acquired new techniques and knowledge in combating land degradation by improving the soil quality and its productivity.

Seventeen of the 37 villages that make up the Keur Moussa community suffer from erosion and land degradation, which cause inadequate agricultural yields. Three villages (Santhie Sérère, Kessoukhatte and Landou) have been selected as pilot sites for erosion control within the framework of the Agrobio Niayes Programme by ENDA PRONAT (Environment and Development Action in the Third World). The project was initiated by local people, and women in particular, following consultations on the problems of, and solutions to, erosion; the disappearance of arable land; uprooting of crops and trees; water scarcity; and inaccessibility of villages. Committees were established according to priorities. The Anti-erosion Committee, in which women are very active, is one of these.

To control the flow of water, they have built barriers and undertaken reforestation.

The barriers are built around the edges of pools of captured rainwater, and consist of stone borders, half-moon canals, bundles of brushwood, infiltration ditches, and open trenches that slow the water down and direct it towards infiltration points.

Women are interested in solving the erosion problem because in addition to affecting agricultural productivity, it also makes it difficult to access clean drinking water. If they were given a choice, their priority would be to have more water resources. They are very active in building stone barriers. All their hard work has had an immediate effect – ground water has been recharged, water bodies have been created and soils stabilized, rain water flow has slowed down; the vegetation is regenerating; and the diversity of the surface vegetation is increasing. The president of the organization said, “Now, there is a lot of water in our wells, and this year we are spending less time drawing water, meaning 1 to 1.3 hours to recharge the well compared to 2 to 3 hours last year. We will continue our anti-erosion campaign for better results”. Agricultural yields have improved and women have begun trading herbs and other plants, which they had not done in a long time.

Source:

The Women's Environment and Development Organization (WEDO) with ABANTU for Development in Ghana, ActionAid Bangladesh and ENDA in Senegal. (2008). *Gender, Climate Change and Human Security: Lessons from Bangladesh, Ghana and Senegal*. Retrieved from the World Wide Web from: <http://www.wedo.org/files/HSN%20Study%20Final%20May%2020,%202008.pdf>

Case study 3

Lighting up hope and communities in Nicaragua

A cooperative business producing and marketing solar products made from recycled solar cells and solar cookers adapted for local needs.

“Lighting Up Hope and Communities” has won one of five 2008 SEED Awards for its work to become a model for the creation of a financially self-sustaining business selling renewable energy products.

Mujeres Solares de Totogalpa is a motivated group of women who are determined to improve the quality of life for themselves and their families in rural north-west Nicaragua. Working in partnership with a university research centre, an NGO and experts on solar technology, they are aiming to set up a cooperative enterprise, “Lighting Up Hope and Communities”, producing photovoltaic panels from recycled solar cells, solar cookers and dryers, and solar cooked/dried food products and medicinal plants. These products will be made at and sold from a new Solar Centre in the community.

Scaling up impacts

As part of the award, SEED is supporting “Lighting Up Hope and Communities” in its efforts to grow. In five years’ time, the project expects the production centres to become completely self-sufficient, and expand to support other community development projects.

It also aims to support local, regional and national outreach and education efforts to bring this renewable energy development model to other communities.

Planned activities include:

- Providing infrastructure and assistance for the production of new energy technologies, through an ongoing exchange with universities, scientists, sociologists as well as national and international volunteer professionals.
- Working with rural communities as equal partners to develop alternative energy strategies in a manner that respects local needs and circumstances.
- Launching a non-profit cooperative in order to produce and sell solar products, using local community members with expertise in construction of solar panels, cookers and dryers and in preparing solar cooked/dried food products and medicinal plants.
- Offering educational courses in solar technology to the community and conducting formal training to increase the number of skilled technicians available to meet increased demand.

About the SEED Initiative

The SEED Initiative identifies, profiles and supports promising, locally-led start-up enterprises working in partnership to improve livelihoods, tackle poverty and marginalization, and manage natural resources sustainably in developing countries.

SEED develops learning tools for the broad community of social and environmental entrepreneurs, informs policy and decision makers, and aims to inspire innovative entrepreneurial approaches to sustainable development.

SEED is a global network founded in 2002 by IUCN, UNDP and UNEP to contribute towards the UN's Millennium Development Goals and the other commitments made at the Johannesburg World Summit on Sustainable Development.

Partners in the SEED Initiative are IUCN (the International Union for Conservation of Nature); the United Nations Development Programme (UNDP); the United Nations Environment Programme (UNEP); and the governments of Germany, the Netherlands, South Africa, Spain, the United Kingdom and the United States of America.

Source:

Seed Initiative. (2008). "2008 Seed Award Winners". Retrieved from the World Wide Web from: <http://www.seedinit.org/mainpages2/awards/2008/nicaragua.pdf?PHPSESSID=41cb460d88d21b1d93854d92d76c81dc>

What “technology” means to you



Objective: Demonstrate that technology is not gender-neutral and that every technological intervention may be perceived differently, have various usage patterns and preferences, and consequently have different impacts on women and men.

Materials: Marker pens, masking tape, flip charts and pins.

Procedure:

1. Briefly explain what “technology” means to you. This can be done individually on paper or aloud in a discussion group.
2. Then provide them with the text on “Areas of focus for technological interventions” from Section 6.4 of this module and ask them to read it individually.

3. Divide them into two groups, one for and one against and have a 15-minute debate about the following statement:
 - Both mitigation and adaptation technologies will have different impacts on men and women and it is necessary for this to be recognized by technology planners and designers.
4. Take notes of the main points raised during the debate.
5. Based on these notes, prepare a closing statement.

Analysis of a case study



Objective: Show that the various climate change adaptation technologies do not take into consideration gender impacts, and that this may lead to outcomes that are disadvantageous for women, especially poor women.

Materials: Marker pens, masking tape, flip charts, pins and copies of the case study.

Procedure:

1. Divide them into groups and answer the following questions about the case study “Women’s vulnerability in the rural communities of Keur Moussa”:

- What social constraints did women face?
 - How did the women overcome these constraints?
 - How did they use technology to solve their problems?
 - What else do you think they could have done?
2. Ask the groups to present their findings in the plenary.
 3. Divide the plenary into two groups, one for and one against. Give them time to prepare their positions. Indicate that they should use the text of the module.
 4. Have a five-to-ten-minute debate on the following statement: Technological solutions to climate change would be very different if more women were in leadership and decision-making positions.

Women's vulnerability in the rural communities of Keur Moussa

The rural communities of Keur Moussa are located between Dakar and Thiès, and comprise 37 villages, most of which are on the Ndiass single-wall butress. The Ndiass is a plateau with a maximum elevation of 120 m. Surrounded by massifs, the villages and their surroundings are exposed to fast-running surface water because of the steep slopes. Water erosion is a serious problem here and has drastic consequences on the environment (resource degradation, soil acidification, gully erosion, absence of water infiltration) and on the communities (fatal accidents, the collapse of housing, inaccessibility to resources).

Women have difficulty accessing water, and also have all sorts of problems with agricultural production. They are unable to grow vegetables out of season. Arable land is being lost due to soil degradation, and the arable land that is available, is often infertile due to surface water flows uprooting vegetation and crops. Therefore, agricultural yields diminish and earnings dwindle. Young people migrate and leave women and the elderly to fend for themselves. In the

villages of Landou, for instance, there are about 118 women and only twenty or so men.

The steepness of the slopes means that it is very difficult for the surface water to soak into the ground to replenish ground water supplies. This exacerbates water shortages especially in the areas where wells have already been dry for two months during the winter season. In some places around the massifs, the ground water is 30 m below sea-level (Ndiaye, 2007), thus contributing to the intrusion of salt water and the breakdown of hydraulic equipment such as drilling machines.

Some organizations have helped the women control erosion in order to retain water and soil, and to recover arable land to achieve better agricultural yields. They have acquired new techniques and knowledge in combating land degradation by improving the soil quality and its productivity.

Seventeen of the 37 villages that make up the Keur Moussa community suffer from erosion and

land degradation, which cause inadequate agricultural yields. Three villages (Santhie Sérère, Kessoukhatte and Landou) have been selected as pilot sites for erosion control within the framework of the Agrobio Niayes Programme by ENDA PRONAT (Environment and Development Action in the Third World). The project was initiated by local people, and women in particular, following consultations on the problems of, and solutions to, erosion; the disappearance of arable land; uprooting of crops and trees; water scarcity; and inaccessibility of villages. Committees were established according to priorities. The Anti-erosion Committee, in which women are very active, is one of these.

To control the flow of water, they have built barriers and undertaken reforestation. The barriers are built around the edges of pools of captured rainwater, and consist of stone borders, half-moon canals, bundles of brushwood, infiltration ditches, and open trenches that slow the water down and direct it towards infiltration points.

Women are interested in solving the erosion problem because in addition to affecting agricultural productivity, it also makes it difficult to access clean drinking water. If they were given a choice, their priority would be to have more water resources. They are very

active in building stone barriers. All their hard work has had an immediate effect – ground water has been recharged, water bodies have been created and soils stabilized, rain water flow has slowed down; the vegetation is regenerating; and the diversity of the surface vegetation is increasing. The president of the organization said, “Now, there is a lot of water in our wells, and this year we are spending less time drawing water, meaning 1 to 1.3 hours to recharge the well compared to 2 to 3 hours last year. We will continue our anti-erosion campaign for better results”. Agricultural yields have improved and women have begun trading herbs and other plants, which they had not done in a long time.

Source:

The Women's Environment and Development Organization (WEDO) with ABANTU for Development in Ghana, ActionAid Bangladesh and ENDA in Senegal. (2008). *Gender, Climate Change and Human Security: Lessons from Bangladesh, Ghana and Senegal*. Retrieved from the World Wide Web from: <http://www.wedo.org/files/HSN%20Study%20Final%20May%202020.%202008.pdf>.

Module 7:

Gender mainstreaming in climate change financing mechanisms

In the first instance, women's response and ability to cope with climate change issues are critically dependent on the robustness of their underlying health and wellbeing and the breadth of their social networks. In the second instance, women's ability to adapt to the demands of climate change depends on the depth of their control over economic resources and their access to financial resources (Williams, personal communication).

Key messages

- Women's economic and financial resources are more greatly endangered by climate change than men's;
- Climate change financing policy does not take into account the effect of climate change on women's economic security. It should focus on promoting investments in micro projects and national carbon taxes that may yield greater benefits to women;
- The voices, concerns and priorities of women cannot continue to be marginal in the existing national and international frameworks for climate change financing;
- Adaptation financing should focus on cost-effective adaptive measures in agriculture and natural resource management that are more in alignment with women's climate change and related activities;
- Mitigation financing should complement greenhouse gas (GHG) abatement with projects that enhance women's livelihoods and rights;
- Private-sector climate change financing should account for and mitigate the negative impacts of market actions on women's access to resources such as land.

7.1 What is climate change financing?

National and international attempts to confront the challenges of climate change have resulted in many actions at all levels of the economy. The goals, targets, modalities, projects and programmes emanating from climate policy around adaptation and mitigation strategies will require significant

resources to cover the cost of the goods, services and technologies needed by developing and developed countries in their implementation of climate change measures. It is estimated that the price tag for climate change is about 20% of global GDP.

The challenges of financing programmes and projects to adapt to climate change and to implement mitigating strategies have led the global community under the auspices of the United Nations Framework Convention on Climate Change (UNFCCC) to establish a system of climate change financing with multiple instruments and mechanisms. Climate change financing instruments are highly differentiated in terms of their strategic approach (adaptation versus mitigation and technological transfer) and are supposed to be custom-built to suit the different levels of economic development of the different countries of the global economy.

Climate change financing, therefore, encompasses the role and actions of financial institutions and financial decision makers, in the public and private sectors, with regard to mediating between donors and recipient governments, savers and investors, lenders and borrowers. The aim of mediation is to manage the risk of reduction strategies and to address the loss and damages associated with climate change impacts and mitigations.

7.2 What does climate change financing have to do with gender?

Many of the factors affecting women's overall empowerment and women's control over economic and financial resources, including microfinance, are well known and have become stylized facts. These factors include: gender inequality around differential access to social and physical goods; gender gaps in education, income, time use and leisure; and gender-differentiated roles and responsibilities in the household, community and labour markets. In the Millennium Development Goal (MDG)-oriented literature, these factors can be clustered in terms of their implication for women's capabilities, access to resources and opportunities, and security. Empirical research has also shown these gender-differentiated dynamics acting across a broad range of human social and economic activities including agriculture, services, manufacturing, water and energy distribution and use, transportation and disaster management.

Women's response and ability to adapt to climate change issues are critically dependent, in the first case, on the robustness of their underlying health and wellbeing, and the depth of their control over social and economic resources.

These include women's control "over land, credit and tools, good health and personal mobility, household entitlement and personal security, secure housing in safe locations, freedom from violence" (Brody *et al.*, 2008). If these are not well established, the affected groups of women will be at a severe disadvantage.

Climate change is associated with the intensification of food shortages, a rise in the occurrence of respiratory diseases, and increasing exhaustion from travelling further and further for water. Complicating the situation for many women is the fact that climate change also introduces new elements such as heat stress and an increase in waterborne diseases into the mix (Brody *et al.*, 2008). These complicating factors further compromise women's ability to function. In some cases, climate change may require new survival skills such as tree climbing and swimming which are not customary activities for women living under certain cultural and religious constraints. Climate change also intensifies the effects of pre-existing gender gaps such as information asymmetry between men and women. While the old forms of asymmetries led to long-term chronic problems such as endemic poverty, the new forms such as asymmetrical information sharing regarding early warning and disaster preparedness are a matter of life and death.

Dealing successfully with the challenge of risk management, disaster preparedness and climate change-induced-weather challenges require resources well beyond those that are normally available to meet the day-to-day needs faced by the average individual and household. It may require resources to build permanent or stronger more robust housing for the family; better and stronger water storage units; and investment in energy-efficient technologies such as solar stoves, for example.

As noted by the UN, empowering and investing in women is the key to combating the effects of desertification and paving the way for rural poverty alleviation in many of the world's least developed countries (Srabani, 2008). Women also play an important role in developing energy systems.

Yet, under the current climate change financing regime, women do not have easy and sufficient access to funds to cover weather-related losses, or to service adaptation and mitigation technologies. Many activities normally undertaken by women which could count as adaptation and mitigation activities, such as tree planting, are not recognized in the global carbon trade market or are overlooked by various groups of funders. Further, given the complexities of the various climate change funds and their complicated applications processes, women's and community groups may have difficulties accessing and absorbing

funds that are designed for large-scale, well capitalized projects. Ultimately, the delivery mechanisms of climate change financing may not be very conducive to the existing level and scope of operations run by women either in the farming, business or household sector. Empirical verification of these issues can only be determined by closer examination of the operations of the climate change financing architecture, including its instruments and mechanisms.

Box 1 Rigidities and challenges in the national and global financial markets

There are well known rigidities and challenges in the national and global financial markets that act to block or distort women's access to economic resources, credit and finance in the credit and money markets. Women are under-represented in climate change decision-making fora. The concerns, priorities and issues of women are marginal to the operations of climate change financing decision makers. Nonetheless, the consequences of decision making in terms of what projects and programmes are financed, and by what means, are also borne by women.

It may also be the case that the same types of gender-based constraints (such as inequality in property rights) that create problems for women in the regular financial markets, may also operate in the context of climate change financing. Such constraints are interlinked with discriminatory norms in the financial markets resulting in inefficiency in resource allocation.

Though there has been very little research on the gender dynamics of climate change financing, if the gender segmentation that is so common in the regular financial markets persists, then it can be expected that:

- Women will tend to ask for smaller loans than men (in the area of climate change financing this may be manifested in terms of the predominance of women in small-scale projects);
- Women tend to give credit to women, so where gender considerations and criteria are not important to the review of project proposals and decision making about approval and disbursement of funds, the ratio of women's projects selected may be lower;
- Women will borrow from special programmes, which have smaller lending limits;
- Women will face higher interest rates or greater transaction costs (due to the size of their projects);
- Women will tend to have less access to, and excess demand for, credit (in this case, many women and women's groups may have numerous projects that require climate change financing but face a limited supply of finance).

7.3 What are the instruments, mechanisms and modalities of climate change financing?

The broad objectives of the current climate change financing regime are to promote and ensure activities of adaptation and mitigation. Specific goals include stabilizing or decreasing GHG emissions and engendering the transformation to a low-carbon economy.

As noted earlier, the overarching governance structure for international climate change policy is the UNFCCC. Therefore, the climate change financing regime now in place was established under the auspices of the UNFCCC and its related processes such as the Kyoto Protocol. The architecture of the climate financing regime is multi-layered and grounded in four complex and intertwined pillars of public finance networks which are complemented by a private-sector network of actors and initiatives. The public elements of the climate change financing architecture include: 1) the United Nations (UNFCCC/ Global Environment Facility (GEF)); 2) the World Bank; 3) other multilateral finance and development institutions; and 4) a host of bilateral donors. The private-sector network includes foundations, venture capital funds, private carbon funds and a network of exchanges.

The financial mechanisms consist of national measures (Box 2) and market-based mechanisms (Boxes 4, 5 and 6). On the public supply side, the World Bank, regional development banks and bilateral donors and national governments use a menu of options ranging from tax incentives, domestic investment, insurance schemes, low-interest credit programmes, grants, concessional financing, co-financing, to targeted programmes. They also have access to voluntary and non-voluntary market-based mechanisms. The private sector uses instruments such as foreign direct investment, options, equity and portfolio investments, and a host of market-based schemes.

The demand side of climate change financing is primarily based on national, regional and international climate change policy and the set of incentives that are built in to facilitate adaptation and mitigation strategies. The key demands are in sectors such as energy, agriculture, forestry and the health sectors, including weather-related agricultural losses, and finance for mitigation and adaptation technologies. The key demanders of funds for adaptation activities are developing countries, who make their demands primarily through the preparation of National Adaptation Programmes of Action (NAPAs).

Box 2 National financial instruments (incentives)

- Direct payments
- Tax reductions
- Price supports
- Tariffs rebates
- Grant programmes
- Loan programmes
- Bonds
- Production incentives
- Government purchasing programmes
- Equity investments, including venture capital
- Insurance programmes

Source: Tirpak et al., 2008.

Currently, climate change financing is biased towards mitigation, so funding for adaptation projects is less readily available than funding for mitigation projects. On the mitigation side, the key actors tend to be developed countries and some emerging market economies such as Brazil, India and China. But increasingly many developing countries are also showing stronger demands for mitigation projects.

The Conference of Parties (COP) established the GEF as its

financial arm. The GEF is subject to review every four years and is accountable to the COP. GEF projects are managed by three implementing agencies: UNEP, UNDP and the World Bank, and seven executing agencies. Most GEF projects have a co-financing element. Participating countries are expected to prepare a series of national communications vehicles which involve taking stock of their climate change needs and priorities.

The COP established three special funds: the Special Climate Change Fund (SCCF) and Least Developed Country Fund (LDCF) under the UNFCCC; and the Adaptation Fund (AF) under the Kyoto Protocol. The GEF manages the two UNFCCC funds as well as its own Strategic Priority on Adaptation (SPA) Trust Fund.

The SCCF is a voluntary fund that relies on donor contributions. It is meant to address issues of adaptation and development, includes transfer of technology, and is in great demand with developing countries. The LDCF is also funded on a voluntary basis. It is supposed to focus on NAPA priority areas (Box 3) including issues of community development and adaptation. There is also the Small Grants Programme (SGP) meant for countries with little capacity. It operates across GEF's focal areas. This is meant to be a very flexible programme which is responsive to the needs of developing countries.

Under the Kyoto Protocol, countries, which are supposed to meet their targets primarily with national measures, can have recourse to three market-based mechanisms. These are emissions trading (or carbon trading/market), the

Clean Development Mechanism (CDM) and joint implementation (JI). Kyoto also created the AF to finance concrete adaptation projects and programmes in developing countries that are Parties to the Kyoto Protocol. This fund, which is managed by the Adaptation Fund Board (AFB, established at COP 13), is financed from a 2% levy on CDM projects as well as from other sources.

Financing adaptation – the state of play

The Bali Action Plan focused greater attention on the somewhat neglected area of adaptation in the international climate change funding regime. Bali identified four financing and finance-related components of adaptation: national planning for adaptation; streamlining and scaling up financial and technological support; enhancing knowledge sharing; and institutional frameworks for adaptation.

It further emphasized 'Enhanced action on adaptation' which include, inter alia, consideration of:

- risk management and risk reduction strategies, including risk-sharing and transfer mechanisms such as insurance;
- disaster-reduction strategies and means to address loss and damage associated with climate change impacts in developing countries that are particularly vulnerable to the adverse effects of climate change.

Adaptation activities require funding for technology transfer and insurance as well as resources to reduce the risk of disasters and increase the resilience of communities to the growing number of extreme events. Most adaptation funding has gone to large-scale projects in Africa, Asia and Latin America dealing with agriculture and forestry, water supply, and coastal zones. Very little has

Box 3 The National Adaptation Programmes of Action

The National Adaptation Programmes of Action provide an important way to prioritize urgent adaptation needs for least developed countries (Article 4.9). They draw on existing information and community-level input to identify adaptation projects required now in order to enable these countries to cope with the immediate impacts of climate change. NAPA priority areas include water resources, food security, health, disaster preparedness and risk management.

There is a great need for the effective participation of women and the integration of gender analysis into addressing the issues of vulnerability and risk management from a holistic and sustainable development perspective.

gone into community-based adaptation. The flow of funds for subsistence issues, which is a key concern of women farmers and critical to the food security needs of all women, is still not adequately addressed.

Financing mitigation – the state of play

The focus of financing mitigation is to remove barriers to energy conservation, renewable energy and the transfer of technology. Mitigation activities receive the most funding from the global climate change financial coffers. Mitigation funds are invested in projects that remove barriers to energy conservation, and promote energy efficiency and the adoption of renewable energy. Though sustainable transportation and integrated ecosystem management are also key priority areas, mitigation financing tends to be biased towards energy and many projects that are financed are large-scale capital-intensive projects. This has implications for the access and ownership of land by indigenous people as well as women. In the final analysis, the current approach to financing mitigation does not seem to consider the social and equity costs of the climate change challenge.

The two key mitigation funding programmes in the UNFCCC framework are the CDM (see Box 5) and the REDD. The World Bank also leads or runs a whole slew of mitigation sub-funds.

REDD (Reducing Emissions from Deforestation and Forest Degradation in Developing Countries) is the newest and most significant finance mechanism for climate change. It offers positive incentives in the form of financial transfers to developing countries to slow down their rates of deforestation and forest degradation to reduce emissions of GHGs (mitigation). Policies and measures under REDD include payment for environmental services (PES), agricultural and forest sustainable management.

Box 4 A snapshot of the evolution of some of the World Bank funds

The World Bank's first generation of climate change financing under the Clean Energy for Development and Investment Framework (CEIF) operates a “+50, 3x5 strategy” – 50% of funding to climate change in three areas (energy (for sub-Saharan Africa); low-carbon development trajectory; and adaptation), across five sectors (transport, agriculture, water, energy and urban). Second generation funds are emerging under the Climate Investment Fund (CIF). These are focused on intermixing development finance and climate change finance implemented through the networks of multilateral or regional development banks (the African Development Bank, the Asian Development Bank, the Inter-American Development Bank and the European Development Bank). CIF funds are all about mitigation and are spread over two sub-funds: the Clean Technology Fund (CTF) geared towards Brazil, India and China, and the Strategic Climate Fund (SCF).

7.4 Market-based schemes and private-sector financing of climate change

The Kyoto Protocol, in establishing the three parallel implementing mechanisms – the JI, emissions trading and the CDM – catalyzed the market for carbon trading. The cap-trading market is meant to facilitate the purchases of emissions from developing countries (see Box 6). This is primarily a voluntary market involving the active participation of private-sector companies from all over the world. The infrastructure of the market is similar to the stock exchange and other capital markets. It is dominated by a network of brokers, exchanges and firms that ultimately seek to generate climate change activities. The market has a number of functions similar to those of traditional money and capital markets. Its pricing mechanism is supposed to act as a signal to investors and help to guide investment decisions. Ultimately it should help to foster the efficient allocation of capital across sectors and countries. It provides instruments for risk management as well as serving as a vehicle for lowering transaction costs.

Box 5 Market-based mechanisms under Kyoto

- **Emissions trading:** Emissions trading, as set out in Article 17 of the Kyoto Protocol, allows countries that have emission units to spare – emissions permitted them, but not “used” – to sell this excess capacity to countries that are over their targets. Thus, a new commodity was created in the form of emission reductions or removals. Since carbon dioxide is the principal greenhouse gas, people speak simply of trading in carbon. Carbon is now tracked and traded like any other commodity. This is known as the “carbon market”.
- **The Clean Development Mechanism (CDM):** defined in Article 12 of the Protocol, allows a country with an emission-reduction or emission-limitation commitment under the Kyoto Protocol (Annex B Party) to implement an emission-reduction project in developing countries. Such projects can earn saleable certified emission reduction (CER) credits, each equivalent to one tonne of CO₂, which can be counted towards meeting Kyoto targets. A CDM project activity might involve, for example, a rural electrification project using solar panels or the installation of more energy-efficient boilers.
- **Joint Implementation (JI):** The mechanism known as “joint implementation,” defined in Article 6 of the Kyoto Protocol, allows a country with an emission reduction or limitation commitment under the Kyoto Protocol (Annex B Party) to earn emission reduction units (ERUs) from an emission-reduction or emission-removal project in another Annex B Party, each equivalent to one tonne of CO₂, which can be counted towards meeting its Kyoto target. JI offers Parties a flexible and cost-efficient means of fulfilling a part of their Kyoto commitments, while the host Party benefits from foreign investment and technology transfer.

Source: UNFCCC database.

Participating in the market occurs at different levels. Each level determines the particular entry requirements as well as the barriers to entry. The key is accessibility in awareness, knowledge and experience. Beyond these starting points, access and control over capital and other economic resources will become the determining or constraining factors for wider levels of participation.

Box 6 The carbon finance market

Currently, the carbon market is dominated by Northern companies such as the European Climate Exchange™ (ECX). The ECX is a derivatives market for Europe and is the largest exchange; it and smaller firms such as the Chicago Climate Exchange (CCX) are in a family of global exchanges. The Chicago Climate Futures Exchange™ (CCFE) is a futures exchange of environmental derivatives (carbon financial instrument (CFI)), Regional Greenhouse Gas Initiative (RGGI), certified emissions reductions (CER), and European Allowance (EUA). The Tianjin Climate Exchange™ (TCX) is a joint venture with China National Petroleum Corporation and the City of Tianjin. The Montreal Climate Exchange™ (MCEX) is a joint venture with the Montreal Exchange. The India Climate Exchange™ is in development. A project has to meet eligibility standards and undergo independent verification to be traded on the CCX Offsets Program. Verified offset projects that sequester or eliminate GHGs earn CFIs that are marketable to CCX members.

Barriers to participation in the CCX Offsets Program include costs (verification, access, transaction) and lack of knowledge of the market (registration, verification, process). Offset aggregators are entities that serve as administrative representatives on behalf of multiple owners of offset-generating projects. When aggregators pool small projects, they are minimizing time and costs, and utilizing their knowledge of the market and its processes. Transaction costs might be too high for a buyer to deal with separate project owners. There are over 75 offset aggregators operating now.

Keys to accessing the carbon market are inclusive design and market infrastructure (function of time and awareness). Programme design has to be inclusive, allow for sourcing of reductions outside the cap, and incentivize behavioural change outside the industry. Market infrastructure is still under development.

The Bundling and Aggregator Model is a way of allowing the meaningful participation of smaller firms in the CCX Offsets Program. It provides access to cost-effective reductions from projects through sharing risks, costs and benefits.

Examples of pre-defined offset projects include:

- Landfill, agricultural and coal mine methane destruction;
- Carbon sequestration: reforestation, afforestation, agricultural soils;
- Renewable energy;
- Fuel switching and energy efficiency.

Source: GCCA, 2008.

As with public sources of climate change financing, the key factors for attracting private-sector finance are awareness; transparent price signals; standardized, consistent and clear rules; and incentives. These features enable the development of trust, efficiency and access, and lower the transaction costs of funding a range of profitable alternatives for investment.

Public-oriented agencies also participate in the carbon market. For example, the World Bank manages over US\$2 billion across 12 funds and facilities. It sources its funds from 16 governments and 66 private companies. Its two new market-based or carbon facilities are the Forest Carbon Partnership Facility (FCPF) and the Carbon Partnership Facility (CPF). While the FCPF focuses on deforestation, the CPF focus on energy and waste management. FCPF seeks to prevent deforestation by building capacity in, and compensating, developing countries for reducing emissions from deforestation and forest degradation. CPF activities include promoting energy efficiency, gas flaring, transport and urban development. In the carbon market schemes, the European Union's Emission Trading scheme (ETS) accounts for over US\$60 billion which is approximately 70% of the global carbon market value.

7.5 Social, development and gender issues and the state of play in climate change financing

There are many developmental, gender and social challenges around the various climate change funds and sub-funds, the instruments, and delivery mechanisms of the global climate change financing architecture. The climate change financing governance structure seeks to promote an enabling environment for preventing the worst-case scenario of rapid and irreversible deterioration in the earth's ecological and environmental balances. There are serious concerns about how the actions, projects and policies that are being engendered will impact long-term issues of poverty eradication, and social and gender equity. Will these issues complement each other, or are they competing and potentially clashing agendas?

From a development, social and gender perspective, there are at least five broad priority areas of concern in this regard.

First, there are concerns about the fragmentary nature of the climate change financing system. Increasingly, there is recognition of the need for greater coordination mechanisms that both simplify and standardize funds, policies and procedures. Greater coherence and simplification of processes will enable poor developing countries to participate more effectively in the system on their own

terms. It will further contribute to transparency and accountability in gender and social equity objectives.

Second, there are clearly tensions and contradictions between the push for climate-friendly technologies that decrease emissions and the emission-intensive stages of development that many developing countries find themselves at. There is a lopsidedness in the sacrifices to be made in terms of responsibility for the problems of generating climate change itself. Whose economic and growth dynamics are to be slowed versus who will benefit from the progression of market-based and high-tech climate change solutions? This is so whether the financing mechanisms focus on promoting transformation to a low-carbon economy or other forms of emissions reductions. In neither case does the set of solutions, at the heart of the climate change financing regime, focus on compensation for prior damages by the North, or on unearthing and enhancing traditional knowledge, know-how and skills of adaptation and mitigation honed over time in developing countries. Such stores of knowledge are available within communities and households in many areas of the global south. Women in many communities are also the keepers and practitioners of such knowledge.

Third, climate change financing mechanisms may also be implicated in the further accumulation of sovereign debts in a context where many developing countries, both low and middle-income, are already highly indebted and operate with questionable debt sustainability ratios. The key culprits here are financial mechanisms that explicitly involve lending as well as those underpinned by the dynamics of co-financing. Another important issue to flag here is the likely threat of the substitution of development financing for climate change financing and the impacts that this may have for social and gender equity. Historically, social development and gender equality interventions in many poor developing countries have been highly dependent on aid and public finance streams.

Fourth, there is currently a strong democratic deficit in the climate change financing governance system. Many of the funds and mechanisms do not ensure the voice and participation of key stakeholders in the formulation, design, implementation and monitoring of the projects and programmes financed. More importantly, the funds and mechanisms that would tend to be the most likely processes for development, poverty reduction and gender-friendly inputs and outcomes are the least resourced and the most vulnerable. For example, the Adaptation Fund is quite inadequately resourced, such that it struggles to fulfil its administrative functions.

Unfortunately, far too few of the more richly endowed financing instruments, particularly those in the strategic area of mitigation, encourage local participation, and themselves rely on a top-down process. For example, as noted by climate justice activists, the World Bank's climate change financing framework is based on a percentage of GDP and so inherently ignores the resources of the poor. In addition, the application and review processes of most climate change financing funds are quite complex, and given the high level of segmentation of funds, do not encourage non-governmental access to fund.

This is especially relevant for very small and under-resourced NGOs in the developing countries. There is an institutional bias in favour of Northern-based NGOs who operate quite large and well financed operations. Hence it is an understatement to say that within this framework, the voices, priorities and concerns of indigenous people and women are often the last heard and the least responded to.

Fifth, as noted above, there is a tendency, given the bias of the system towards mitigation, to marginalize women's and indigenous peoples' rights and livelihoods in favour of high-tech and large infrastructure projects. Often this is due not to an intention to discriminate against or to marginalize, but rather an ignorance and unwillingness to take into account the historical situation or the outcome of systemic gender discrimination that has impacted the present status of women and indigenous people with regard to education, land, forests and other economic resources.

This is why a gender and a human rights perspective must underlie and be integrated into the strategic approach of multilateral adaptation and mitigation funds implemented by the World Bank and GEF-UN. This pertains as well as to the carbon market. Overall, in order for climate change financing to have positive impacts on indigenous people and to promote women's economic and social empowerment, the outstanding issues of transparency and accountability at the multilateral, bilateral and national levels; corporate social responsibility; capacity building; and support for advocacy must be addressed. The next section examines these issues in a more gender-focused way.

7.6 Gender and the state of play in climate change financing

As identified in the previous section, there are specific biases at work within the operational domain of climate change finance, which are both structural and institutional:

- 1) The public sector and private sector are biased towards, and prioritize, mitigation over adaptation. As a result, there is less money for adaptation;
- 2) There is a bias towards the energy sector and large-scale projects. As a result of these two biases, community groups, NGOs from the South and, even more so, women's groups are often found at the margin of climate change financing activities;
- 3) There is a pervasive male bias permeating the entire climate change financing structure.

The male bias springs from the underlying climate change policy complex itself. Climate policy has tended to pursue climate change as a purely scientific, technical, gender and class-neutral endeavour. However, dealing with climate change involves changing and modifying human behaviour, making trade-offs between different types of economic and social activities, and making decisions about what activities are beneficial to the total economic output. These are all based on value judgements which are conditioned, as noted in Module I, on the prevailing gender ideology and gender systems in place at the national, regional and global levels. Gender discrimination and gender myths permeate all these levels and all the institutions of governance. It is no less pervasive within the so-called technical areas whether in macro-economic and financial policies or within the sciences.

Box 7 Gender myths underpinning financial markets

- Women are less capable of economic success than men;
- Women are risky borrowers;
- Women borrow for consumption without the capacity for repayment.

Yet the reality is that:

- Women, in developing countries, have higher repayment rates than men (97% higher);
- Women borrow for short-term liquidity purposes and have long-term cash flows for repayment;
- Consumer goods are often transformed into capital goods in the household and informal sectors (for example, refrigerators and stoves are often used to make and sell ice to neighbours, and to cook food for sale in the informal sector etc.).

The financial markets, as discussed in Section one of this module, exhibit the same tendency towards gender subordination – seemingly holding

steadfastly to the gender myths about women, their role and participation in the economy (Box 7). Therefore, it is not surprising that these issues should continue to dominate within climate change finance at all levels. It is not uncommon that the private sector does not pay attention to gender issues at all. Thus the market tends to ignore the impacts of its actions on women's land-use options, incomes and livelihoods, food affordability and the related cost of living including the price of land. This, unfortunately, is also true of World Bank-implemented projects, despite the tremendous amount of research that the Bank has undertaken on gender and development.

Invariably, it is the case that climate change financing occurs in a context in which, even when it does consider women, they are still seen as vulnerable groups instead of major environmental and agricultural producers in the world. Unfortunately, the myths of the male farmers, the male business owner and the male head of household continue to dominate the imagination of climate change financing decision makers.

So, for example, in the case of financing mechanisms such as REDD, it is important to undertake gender and social impact assessment in order to make sure that women do not lose their ownership and control of land and forests. A key goal built into such projects must be that they, at worse, do no harm by displacing and dispossessing women and indigenous people from their traditional patterns of access and control of these resources. At best, such projects should aim to enhance women's and men's economic and social status.

In the case of the carbon markets, the inherent assumption is a level playing field in which women and men have the same carbon footprints. So the issue of equity of burden sharing does not arise. But equity of burden sharing is quite a weighty issue as it is well known that women and indigenous people have smaller ecological footprints. Instruments must be devised that take this into account. This could include, for example, governmental incentives such as tax breaks, grants and outright set-aside programmes for women and for indigenous groups. Within the context of the market, the pooling of funds to create women-centred funding instruments would be a step in the right direction. However, such innovations will only arise from greater awareness of, and education and training on, the dynamics of the carbon markets, its functioning and impacts as well as its opportunities and constraints.

Box 8 Aggregators and gender

The idea of “an aggregated market structure” with “aggregators” that link small or micro-scale operations to the carbon market presents a possibility for offset projects to achieve environmental and social objectives. For example, in the Indian state of Kerala, an NGO Andhyodaya is promoting methane capture and use with biogas digesters in small rural households. The methane replaces kerosene or fuel wood for cooking. Contracts are issued on the basis of fossil fuel emission displacement. The project is so small on an individual household level that it would not be able to access the carbon market without an aggregator. However, within an aggregated market infrastructure, it becomes an attractive prospect. Phase I of the project included 15,000 poor rural households in South India. About US\$1.2 million gross revenue was transferred in aggregate to participants.

The challenge here is to ensure that decision making remains in the hands of the gender-sensitized community or the women’s organizations involved.

Source: GCCA, 2008.

Outstanding questions and challenges for the way forward include:

- How financially sustainable are women’s organizations? Most women’s organizations’ budgets are small with an annual income of less than US\$50,000 (United Nations, 2007).
- Inadequate funds for gender and development. How do we ensure that women’s groups have the capacity to engage effectively in policy dialogue in the changing aid environment? How do we ensure that women’s groups have access to information and that their voices, priorities, interests, and knowledge make an impact? How can more climate funds become available to them?
- Gender-sensitive reform of the GEF.
- Gender analysis of public finance.

While these are very large issues, with the collaboration of experts in the area of gender-responsive budgeting, gender taxation and finance, and the overall area of gender and macro-economics and trade, it may be possible to tackle some of these issues and have substantive input into the reconstruction of the post-2012 financing regime.

7.7 Gender and the post-2012 climate change financing regime

Anticipated changes in the global climate change financing regime will be realized with the result of the final conclusion of the deliberations of the Conference of the Parties (COP-15) in Copenhagen in 2009. Decisions will be taken on a shared vision for global climate change, the strategies, targets and actions for future emissions reductions (20% by 2020, or 50% by 2030, or some other formulation around 2050) in the post-2012 period. In the case of climate change financing, decisions and commitments will also be made on the kinds of support that will be important for governmental processes and measures such as NAPAs, and risk-reduction initiatives and technologies.

The Copenhagen meeting will also provide the elements for broadening the operations of, and possibly securing more funding for, specific financial instruments such as REDD. At the same time, on a parallel track, there will be scope to rethink instruments such as the CDM, emissions trading and carbon credits, which are due to expire in 2012.

After Copenhagen, there is likely to be an infusion of funds into some existing financial instruments (for example, the 5th replenishment of GEF) as well as an impetus towards second or third generation funds for both adaptation and mitigation. It is to be hoped that the same old template will not be automatically relied upon, but rather that new and innovative gender-sensitive templates are created. Undeniably, the period leading up to Copenhagen, as well as the COP-15 deliberations themselves, provide a window of opportunity for building in processes, mechanisms and procedures that are gender-sensitive and which will work to the advantage of women's economic and social empowerment.

With regard to climate change and its financing, the task is to ensure that the concerns and priorities of women, especially poor women, move to centre stage of the financing agenda. Women's, especially poor women's, priorities and concerns should be key items on the COP-15 agenda.

The way forward in engendering climate change financing

It is therefore important in the interim period to aggressively push a platform that seeks to address public-finance and private-sector financing issues in the context of gender equality objectives. This will lead to a cohesive short-term and long-term policy and activist agenda based around at least six key elements:

- Demystifying the concepts and instruments of climate change financing and promoting the value of a gender-sensitive and woman-friendly approach. This can be done through a broad awareness-raising process focusing on women's groups, gender, and policy makers as well as all levels of the institutions in charge of implementing climate change financing initiatives.
- Information and training on techniques to scale up knowledge and practices with regard to projects and programmes for gender-sensitive climate change financing both in the public and the private sectors.
- Dealing with underlying, persistent and pervasive structural issues that maintain and exacerbate gender inequalities, asymmetries and biases. This requires a coherent approach that consciously grounds advocacy in the broader framework of sustainable economic development, poverty eradication and rural and agriculture reform. Such an approach focuses on food sovereignty and reinforces micro-meso-macro linkages.
- Putting together programmes that will catalyze and assist women's and community-based organizations (CBOs) to design, put to tender and manage climate change initiatives locally, nationally, regionally and globally. This will require lobbying and advocacy in both the private and public sectors to expand the provision of finance and credit to women (a gender-sensitive financing facility?).
- Proactive work to secure, at national and global levels, new and increased funding, specially earmarked for women's empowerment and gender-equality interventions in the climate change area. This could for example be part of the GEF Small Grants Programme which is flexible enough to allow for innovation and creativity, or a separate and autonomous funding model.
- A participatory research agenda focused on generating evidence on the impact of climate change financing mechanisms on women's status. Within this context, there could be the development of gender audits of financing projects, gender impact assessments, and progress towards the development of gender-sensitive climate change financing indicators.

Strategic opportunities and openings exist for modifying and reforming existing frameworks in institutions, instruments and mechanisms such as the World Bank, the GEF, NAPAs and REDD.

- **The World Bank:** The Bank's Strategic Framework on Climate Change and Development is supposed to address social and human dimensions, including gender, as well as economic, financial and environmental elements. The same approach should be applied to its two new facilities, the FCPF and the CPF. Lobbying should be done to ensure that, at the very least, the Bank integrates and embeds its own gender analysis and guidelines into these programmes. At best, the Bank should also take on board recommendations from women's groups for promoting greater gender sensitivity in the work programmes of the funds it administers.
- **The GEF:** The GEF's two weak areas are in gender mainstreaming and adaptation mainstreaming. These two need to be intertwined to reinforce each other. A gender audit of GEF's programmes is certainly timely.
- **NAPAs:** the process for working out the final structure and criteria for project funding for NAPA is currently on the table. Now is the time, therefore, for active lobbying to ensure that gender concerns and women's priorities are integrated and interwoven with any emerging sets of criteria.

Box 9 The GEF and participation

The GEF works with NGOs and CBOs through national steering committees. Steering committee members and national coordinators are provided with tools to incorporate gender into the implementation of programmes. Using training modules developed by GEF, they are asked to conduct national reviews and assessments of how gender-sensitive policies are. After the training, national steering committee members are asked to put in writing what they would do and how they would implement gender mainstreaming. There is a database of how they can follow the process of incorporating gender. Through this training process, every national steering committee member gains a gender dimension, so he or she knows how to mainstream gender.

Currently, 103 countries within the GEF programmes have more women as national coordinators and include provisions to access leadership. At the initiation stage, both men and women are included, and they decide what they want to work on, and how to impact assessment.

Source: GCCA, 2008.

Further resources

Brody, A., Demetriades, J. and Esplen, E. (2008). *Gender and climate change: mapping the linkages*. Brighton, UK: BRIDGE-Institute of Development Studies. Retrieved from the World Wide Web: http://www.bridge.ids.ac.uk/bridge/reports/Climate_Change_DFID.pdf

GCCA. (2008). *Gender and Climate Change Workshop Report*. 19–20 November, New York.

GenderCC Network – Women for Climate Justice. (2007). "Gender: Missing Links in Financing Climate Change Adaptation and Mitigation". Unpublished position paper presented at the UNFCCC COP 13, Bali, Indonesia. Retrieved from the World Wide Web: http://www.gendercc.net/fileadmin/inhalte/Dokumente/UNFCCC_conferences/gender_cc_financing_positionpaper_bali_final.pdf

Perlata, A. (2008). *Gender and Climate Change Finance – A Case study from the Philippines*. New York, USA: WEDO.

Skutsch, M. (2004). "CDM and LULUCF: what's in it for women? A note for the Gender and Climate Change Network". Retrieved from the World Wide Web: <http://www.gencc.interconnection.org/skutsch2004.pdf>

Srabani, R. (2008). "Women's Expertise Key to Rolling Back Deserts". Inter Press Service, 27 September. Retrieved from the World Wide Web: <http://ipsnews.net/news.asp?idnews=34899>

Tirpak, D., Gupta, S., Perczyk, D. and Thioye, M. (2008). *National policies and their linkages to negotiations over a future international climate change agreement*. An Environment & Energy Group Publication. New York, USA: UNDP.

Turrall, S. (2006). *Learning from the Renewable Natural Resources Research Strategy*. Adapted from Bennett, E. (2005). *Gender and the DFID RNRRS: A Synthesis*. London, UK: DFID.

United Nations. (2007). *Fifty-first session of the United Nations Commission on the Status of Women*. 26 February–9 March 2007, New York. Informal expert panel: Financing for gender equality and the empowerment of women. Moderator's Summary.

Voluntary Services Overseas (VSO). (2006). *Reducing the Burden of HIV & AIDS Care on Women and Girls*. VSO Policy Brief. UK: VSO. Retrieved from the World Wide Web: http://www.vso.org.uk/Images/RBHACWG_tcm8-8415.pdf

WEDO. (2003). *Common Ground, Women's Access to Natural Resources and the United Nations Millennium Development Goals*. New York, USA: WEDO. Retrieved from the World Wide Web: http://www.wedo.org/files/common_ground.pdf

Assignments for this module:

Activity	Procedure	Time
To ground the concept of climate change financing	Technique "What does 'climate change financing' mean to you?"	1 hour
To explore the biases in climate change financing and show that climate change financial policies have limited focus on women's concerns and minimal women's participation	Technique "Analysis of a case study"	45 minutes

Case studies

Case study 1

The women of Amihan and the impact of climate change financing

Amihan is a national NGO of Filipino peasant women with members in 32 provinces in the Philippines. The main manifestation of climate change is in altered rain pattern and recurrent heavy rains. There are also erratic monsoons that disrupt planting seasons and negatively impact crop yields. These factors pose tremendous problems for the livelihoods and economic security of the women in the affected area. This is compounding an already existing and deepening agrarian crisis linked to under-investment in rural development, trade liberalization in agriculture, and land conversion policies that have eroded rural livelihoods and incomes, causing many women to take up jobs as domestic helpers in cities or migrate overseas, often illegally, in search of economic opportunities.

Amihan notes that the climate change crisis disproportionately affects women farmers *vis-à-vis* men farmers in at least three ways. First, since women manage, control and own fewer resources – especially land – than men, they have fewer assets to sell to cope when harvests collapse either because of floods or droughts. Second, more women than men fall into chronic indebtedness related to climate-induced crop failures because micro-credit is largely targeted at women and because, as managers of production and household expenses, they are under stronger pressure to bridge resource gaps.

One study found that some 94% of women involved in rice production borrowed money from informal moneylenders, small convenience stores, cooperatives and relatives to finance rice cultivation and augment household expenditures. Third, when food shortages arise from poor harvests linked to weather problems, women prioritize the food needs of male household members and children over their own.

Drawing from a rich body of local and traditional knowledge, people in the countryside have begun to adjust to extreme weather variations using a variety of adaptation and coping strategies. Agricultural adaptation strategies include practising crop diversification, planting crop varieties that are resistant to droughts, floods and pests; cultivating at higher levels; practising contour farming; planting bamboo to prevent soil erosion; and constructing temporary drainage canals. Financial coping strategies include engaging in off-farm work; looking for other sources of income at home and abroad; taking out loans from money-lenders, relatives and friends; selling off livestock; seeking government financial assistance; renting out, selling or pawning farm plots; and reducing food consumption.

With limited resources and support, women farmers are organizing and strategizing in

order to secure their livelihoods and access to basic needs. In particular, Mahan members in the provinces of Rizal, Pampanga, Quezon and South Cotabato are increasingly engaged in organic farming initiatives, integrated pest management programmes, agro-forestry, and tree-planting projects.

Women farmers who are members of Amihan in Montalban and Rizal are beginning to cultivate a traditional, indigenous variety of rice that does not require massive doses of chemical fertilizers and pesticides, and is more resistant to pests than commercial varieties. The women are also planting fruit trees and vegetables on the borders separating the rice paddies as a form of inter-cropping. While this alternative practice of farming rice yields only one harvest a year, it is respectful of the environment and generates significantly lower GHG emissions than commercial farming. At the same time, it adapts rice farming to the prolonged wet seasons brought about by climate change.

From the point of view of the rural poor and women, the protection of their livelihoods and sources of sustenance are paramount, entailing adaptation measures that build climate resilience into agriculture and fisheries, ensure people's access to potable water and other necessities, and provide social insurance and protection, among others.

Amihan also calls for government support and funds directed towards rural communities – and especially rural women – for the provision of subsidized organic seeds, fertilizers and

pesticides; access to affordable agricultural technologies; dissemination of agro-forestry techniques; and provision of low-interest farm credit and crop-insurance schemes specifically targeted at small farmers. In addition, it is currently lobbying Congress to repeal the 2006 Bio-fuels Act. Amihan notes that plantations of jatropha, a major bio-fuel crop, require high chemical inputs that would cause the soil to dry out. Amihan is also pushing for the passage of an agrarian reform bill aimed at promoting land reform, by establishing certainty of land tenure and encouraging farmers to invest in climate-proofing (as well as addressing basic issues of justice and equity).

In addition, Amihan is beginning to conduct advocacy around climate change at the global level.

The Philippine government's policy response to the climate change challenges of adaptation and mitigation is based on a four-track approach: 1) promoting investments in renewable-energy projects such as mega hydro dams through public subsidies; 2) scaling up CDM projects, and piloting and establishing a carbon trading system; 3) expanding ODA, loans and grants from donor countries as well as regional international and financial institutions; and 4) charging user fees for some environmental services, encouraging public-private sector initiatives and privatizing public enterprises and lands.

There were also a couple of adaptation projects focusing on agriculture. For example, the Philippine Climate Change Adaptation

Project Phase 1 includes the design of cost-effective adaptation measures in agriculture and natural resource management. While the benefits of pooling risks and of insurance against climate-related hazards in support of adaptation efforts are increasingly appreciated internationally, this remains a rather underdeveloped area in the Philippines largely because of scarce private-sector interest. The government-owned Philippine Crop Insurance Corporation (PCIC) offers weather-related crop-damage insurance, but small farmers have limited access to the fund since they cannot afford the premiums. The World Bank and ProVention Consortium-funded Agriculture Climate Risk Assessment Project will explore the possibility of piloting a weather-based insurance system.

There are major problems with the government's policy response and its financing of mitigation and adaptation.

Firstly, its reliance on more debt instruments to finance climate change challenges will add to its already high debt burden. There is no recognition that subsidizing large-scale renewable energy projects such as mega hydro dams could have adverse gender and social implications. In making this choice, the government has ignored other GHG abatement projects such as community forest management and agro-forestry schemes, with potentially strong poverty alleviation outcomes. It has also neglected to focus on adaptation measures that could build climate resilience into agriculture and fisheries, and hence ensure people's access to water and other necessities.

Secondly, the government has opted to establish a carbon trading system instead of imposing a national carbon tax and other forms of pollution taxes which could have both reduced GHG emissions and raised public funds for adaptation. Research shows that a national carbon tax in the Philippines could not only reduce poverty and increase welfare but would also raise revenues for adaptation that could enhance gender equality, especially if adaptation financing was used to support rural development.

Lastly, imposing user fees for environmental services could have a regressive distributional impact and prevent rural women from accessing such services.

Source:

Perlata, A. (2008). *Gender and Climate Change Finance - A Case study from the Philippines*. New York, USA: WEDO.

What does ‘climate change financing’ mean to you



229

Objective: To ground the concept of climate change financing and to explore the type of financing instruments that might be appropriate for the “community” from the perspective of male and female.

Materials: Marker pens, masking tape, flip charts and pins

Procedure:

1. Briefly explain what you understand by the phrase “climate change financing”. Each person in the group should say aloud a word or phrase or an expression that embodies or clarifies the term’s meaning to her or him.

2. Ask the group to think about a climate change issue in their community or nation (identify what approach to take – adaptation or mitigation). What would a project to address this problem look like? Discuss this for 15 minutes.
3. Now ask the participants to review the discussion: What are the instruments, mechanisms and modalities of climate change financing? (Section 7.3).
4. Divide the group into groups of males only and females only. Let them draft a mini proposal for funding to implement the project they discussed in (2) above.
5. Have them discuss to which funding mechanisms they would submit the project, and what they think the likely response to the proposal might be.

Analysis of a case study



231

Objective: To explore the biases in climate change financing and show that climate change financial policies have limited focus on women's concerns and minimal women's participation.

Materials: Marker pens, masking tape, flip charts, pins and copies of the case study.

Procedure:

1. Divide the participants into groups and ask them to answer the following questions about the Amihan case study:
 - What climate change challenges did the women face?
 - What were the women's responses to this challenge?
 - What were their financial and other coping strategies?

- What advocacy did the women undertake to influence policy?
 - What was the government's response to the climate change challenges in general and to the climate-related problems in the agricultural sector?
 - Did this address the women's concerns?
 - What long-term actions would you have taken?
 - If women were making the climate change financing policy, what would be different?
2. Discuss in your small group and then report back to the closing plenary.

Appendix 1: Annotated bibliography¹

This appendix includes a selection of the main publications on the climate change theme that have appeared to date (October, 2008).

Each reference is presented according to the citation manual of the American Psychological Association (APA), including the name of the author, title, where it was published, the publisher or availability on the internet. Each citation is followed by a brief descriptive and evaluative paragraph, the annotation.

The information is presented in two alphabetically arranged sections:

A. Basic bibliography

1. Climate change: reference framework
3. Climate change and gender
5. Energy and gender
6. Mitigation and adaptation

B. Other resources

1. Guides and manuals
2. Information/Fact sheets
3. Portals and web sites
4. Other

¹ This appendix has been improved from: Aguilar *et al.* (2008). **Guía: Recursos de Género para el Cambio Climático**. UNDP, Mexico.

A. Basic Bibliography

1. Climate change: reference framework

Reference	Description
Epstein, P.R. and Mills, E. (Eds) (2005). Climate Change Futures: Health, Ecological and Economic Dimensions . Center for Health and the Global Environment, Harvard Medical School, United Nations Development Programme (UNDP) and Swiss Re. Retrieved from the World Wide Web from: http://www.undp.org/biodiversity/pdfs/CCF_Report_2005_final.pdf	This multidimensional assessment of climate change addresses trends, case studies and scenarios, focusing on health issues. Its premise is that climate change will affect human health, as well as the ecosystems and the species on which we depend. These impacts on health will have economic repercussions.
Fuentes, R. and Seck, P. (2007). The Short and Long-Term Human Development Effects of Climate-Related Shocks: Some Empirical Evidence . Occasional Paper for the Human Development Report 2007/2008. Retrieved from the World Wide Web from: http://hdr.undp.org/en/reports/global/hdr2007-2008/papers/background_ricardo_papa_2007.pdf	This document served as a background paper for the <i>Human Development Report 2007/2008 "Fighting climate change: Human Solidarity in a divided world."</i> It analyzes the disadvantages for human development caused by the impact of climate-related disasters. It analyzes data about homes in four countries that have suffered from recurrent climatic disasters, such as floods and droughts.
Holdren, J. (2007). Meeting the Climate-Change Challenge: Avoiding the Unmanageable & Managing the Unavoidable . Retrieved from the World Wide Web from: http://www.un.org/esa/sustdev/csd/csd15/statements/holdren_9may.pdf	This PowerPoint presentation was shown to the high-level round table on climate change at the 15 th Session of the United Nations Commission on Sustainable Development (CSD-15). It details recommended adaptation and mitigation strategies.
IPCC [Core Writing Team and Watson, R.T. (Eds)]. (2001). Climate Change 2001: Synthesis Report . A contribution of Working Groups I, II and III to the Third Assessment Report of the Intergovernmental Panel on Climate Change (IPCC). Cambridge University Press, Cambridge, UK, and New York, NY, USA, 398 pp. Retrieved from the World Wide Web from: http://www.ipcc.ch/pdf/climate-changes-2001/synthesis-spm/synthesis-spm-en.pdf	Represents three years' work by about 450 main authors and 800 contributing authors. It also has comments by approximately 100 experts and government representatives. The report answers nine questions about scientific, technical and socio-economic questions on climate change.
IPCC [Core Writing Team, Canziani, O.F., Dokken, D.J., Leary, N.A., McCarthy, J.J. and White, K.S. (Eds)]. (2001). Climate Change 2001: Impacts, Adaptation and Vulnerability . Part of the contribution of Working Group II to the IPCC Third Assessment Report. Retrieved from the World Wide Web from: http://www.ipcc.ch/ipccreports/tar/wg2/index.htm	This volume, which forms part of the Third Assessment Report (TAR), has been produced by Working Group II (WGII) of the IPCC and focuses on the environmental, social and economic consequences of climate change and potential adaptation responses. It consists of 19 chapters covering the sensitivity, adaptive capacity, and vulnerability of natural and human systems to climate change, and the potential impacts and adaptation options at regional and global scales.
IPCC [Core Writing Team, Houghton, J.T., Ding, Y., Griggs, D.J., Noguer, M., van der Linden, P.J., Dai, X., Maskell, K. and Johnson, C.A. (Eds)]. (2001). Climate change 2001: The Scientific Basis . Part of the contribution of Working Group I to the IPCC Third Assessment Report. Cambridge University Press, Cambridge, UK and New York, NY, USA, 881 pp. Retrieved from the World Wide Web from: http://www.ipcc.ch/ipccreports/tar/wg1/index.htm	Describes advances made in understanding natural and human factors linked to climate change. It is based on IPCC assessments made in 2001 and includes new scientific research discoveries made during the past six years.

Reference	Description
IPCC. (2001). Climate change 2001: Mitigation. Part of the contribution of Working Group III to the IPCC Third Assessment Report. Cambridge University Press, Cambridge, UK and New York, NY, USA. Retrieved from the World Wide Web from: http://www.ipcc.ch/ipccreports/tar/wg3/index.htm	This report summarizes the state of knowledge of previous IPCC reports, and assesses information generated since the SAR, emphasizing the assessment of the sectoral and regional aspects of climate change mitigation. The assessment focuses on the policy-relevant questions of today. It also draws on the IPCC Special Reports on Aviation and the Atmosphere, on Methodological and Technological Issues in Technology Transfer, on Land Use, Land-Use Change and Forestry, and Emissions Scenarios that were published in 1999 and 2000.
IPCC [Core Writing Team, Pachauri, R.K. and Reisinger, A. (Eds)]. (2007). Climate Change 2007: Synthesis Report. Contribution of Working Groups I, II and III to the IPCC Fourth Assessment Report. IPCC, Geneva, Switzerland, 104 pp. Retrieved from the World Wide Web from: http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr.pdf	This underlying report, adopted section by section at IPCC Plenary XXVII (Valencia, Spain, 12–17 November 2007), represents the formally agreed statement of the IPCC concerning key findings and uncertainties contained in the Working Group contributions to the Fourth Assessment Report (AR4). The Report is based on the assessment carried out by the three Working Groups of the IPCC. It provides an integrated view of climate change as the final part of the AR4.
IPCC [Solomon, S., Qin, D., Manning, M., Chen, Z., Marquis, M., Averyt, K.B., Tignor, M. and Miller, H.L. (Eds)]. (2007). Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the IPCC Fourth Assessment Report. Cambridge University Press, Cambridge, UK and New York, NY, USA, 996 pp. Retrieved from the World Wide Web from: http://www.ipcc.ch/ipccreports/ar4-wg1.htm	This Working Group I contribution to the AR4 provides a comprehensive assessment of the physical science of climate change and continues to broaden the view of that science, following on from previous Working Group I assessments. The results presented here are based on the extensive scientific literature that has become available since completion of the IPCC Third Assessment Report, together with expanded data sets, new analyses, and more sophisticated climate modelling capabilities.
IPCC [Parry, M.L., Canziani, O.F., Palutikof, J.P., van der Linden, P.J. and Hanson, C.E. (Eds)]. (2007). Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the IPCC Fourth Assessment Report. Cambridge University Press, Cambridge, UK, 976 pp. Retrieved from the World Wide Web from: http://www.ipcc.ch/ipccreports/ar4-wg2.htm	Drawing on over 29,000 data series, the current report provides a much broader set of evidence of observed impacts coming from the large number of field studies developed over recent years. The analysis of current and projected impacts is then carried out sector by sector in dedicated chapters. The report pays great attention to regional impacts and adaptation strategies, identifying the most vulnerable areas. A final section provides an overview of the inter-relationship between adaptation and mitigation in the context of sustainable development.
IPCC [Metz, B., Davidson, O.R., Bosch, P.R. Dave, R. and Meyer, L.A. (Eds)]. (2007). Climate Change 2007: Mitigation of Climate Change. Contribution of Working Group III to the IPCC Fourth Assessment Report. Cambridge University Press, Cambridge, UK and New York, NY, USA. Retrieved from the World Wide Web from: http://www.ipcc.ch/ipccreports/ar4-wg3.htm	The third volume of the report presents an analysis of costs, policies and technologies that could be used to limit and/or prevent emissions of greenhouse gases, along with a range of activities to remove these gases from the atmosphere. It recognizes that a portfolio of adaptation and mitigation actions is required to reduce the risks of climate change. It has also broadened the assessment to include the relationship between sustainable development and climate change mitigation.
Stern, N. (2006). The Economics of Climate Change: The Stern Review. Cabinet Office – HM Treasury. Cambridge University Press, Cambridge, UK. Retrieved from the World Wide Web from: http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/sternreview_index.cfm	The Stern report contains information on the impact of climate change and global warming on the world economy. It was prepared by the United Kingdom Treasury. It examines the impacts of climate change, its risks and associated costs. The report concludes that, because climate change is a serious global threat, the benefits of taking strong and timely action are more important than the economic costs of not taking action.

Reference	Description
UK Parliamentary Office of Science and Technology. (2006). Adapting to Climate Change in Developing Countries . Retrieved from the World Wide Web from: http://www.parliament.uk/documents/upload/postpn269.pdf	Concise bulletin that covers the most pressing matters for developing countries insofar as they adapt to climate change.
United Nations Framework Convention on Climate Change (UNFCCC). (2005). The Kyoto Protocol . Retrieved from the World Wide Web from: http://unfccc.int/resource/docs/convkp/kpeng.pdf	The Kyoto Protocol of the UNFCCC is an amendment to the international treaty on climate change that obliges signatory nations to reduce emissions. It entered into force on 16 February 2005.
United Nations. (1994). Framework Convention on Climate Change (UNFCCC) . Retrieved from the World Wide Web from: http://unfccc.int/resource/docs/convkp/conveng.pdf	Text of the UNFCCC, which entered into force on 21 March 1994, and established an international framework for governments, working together, to develop a policy proposal to reduce the effects of climate change and adapt to its threats.
UNDP. (2001). Sustainable Energy, Development & the Environment: UNDP's Climate Change Initiatives . Retrieved from the World Wide Web from: http://www.energyandenvironment.undp.org/undp/indexAction.cfm?module=Library&action=GetFile&DocumentAttachmentID=1019	This eight-page leaflet outlines the commitment made by UNDP to support developing countries' initiatives to respond to the implications of climate change, placing special emphasis on improving the lives of those living in extreme poverty.
UNDP. (2007). Human Development Report 2007/2008. Fighting Climate Change: Human Solidarity in a Divided World . Retrieved from the World Wide Web from: http://hdr.undp.org/en/reports/global/hdr2007-2008/	The report warns that climate change threatens to reverse human development and may lead to setbacks in health, education and poverty reduction, thus making inequalities worse. The document also points out the shared but different responsibility of countries to heed this common challenge and to promote compliance with the Millennium Development Goals (MDGs).
UNDP/Global Environment Facility (GEF). (2004). Lessons for the Future 2004: Meeting the Climate Change Challenge, Sustaining Livelihoods . Retrieved from the World Wide Web from: http://www.energyandenvironment.undp.org/undp/indexAction.cfm?module=Library&action=GetFile&DocumentAttachmentID=1115	This UNDP/GEF leaflet highlights examples of activities dealing with climate change according to the five GEF priority areas: transforming market policies to promote energy-efficient products and processes; increasing access to local sources of financing for renewable energy and energy efficiency; promoting power-sector policy frameworks to support renewable energy and energy efficiency; renewable energy for poverty alleviation; and catalyzing shifts in modes of urban transport and the use of "clean" vehicles and fuel technologies.

2. Climate change and gender

Reference	Description
BRIDGE (development – gender). (2008). Gender and Climate Change: Mapping the Linkages. A Scoping Study on Knowledge and Gaps . Institute of Development Studies, Brighton, UK. Retrieved from the World Wide Web from: http://siteresources.worldbank.org/EXTSOCIALDEVELOPMENT/Resources/DFID_Gender_Climate_Change.pdf	Seeks to put together previous efforts to link gender and climate change to reinforce future research. It attempts to identify aspects that today are not part of the discourse.

Reference	Description
<p>Canadian International Development Agency (CIDA). (n.d.). Gender Equality and Climate Change: Why Consider Gender Equality When Taking Action on Climate Change? Retrieved from the World Wide Web from: http://www.acdi-cida.gc.ca/INET/IMAGES.NSFvLUImages/Climate%20change3/\$file/Gender-2.pdf</p>	<p>Analyzes relations between gender equity and climate change concerning the question: why consider gender equity when acting on climate change? Deals with such essential matters as food security, hydraulic resources and the effects of climate change on human health.</p>
<p>CAPWIP, ISDR, WEDO, GGCA, UNDP, UNEP, IUCN, UNIFEM, ADB and IPU. (2008). Manila Declaration for Global Action on Gender in Climate Change and Disaster Risk Reduction. Third Global Congress of Women in Politics and Governance. Retrieved from the World Wide Web from: http://www.capwip.org/3rdglobalcongress.htm</p>	<p>The participants of the Third Global Congress of Women in Politics and Governance, on Gender in Climate Change Adaptation and Disaster Risk Reduction, gathered in Manila, Philippines, 19-22 October, 2008 to draft a declaration to advocate for the inclusion of gender considerations in the UNFCCC COP-14 (Poznan), COP-15 (Copenhagen), the Second Session of the Global Platform for Disaster Risk Reduction and beyond.</p>
<p>Dankelman, I. (2002). Climate Change: Learning from Gender Analysis and Women's Experiences of Organizing for Sustainable Development. In: <i>Gender & Development</i>, Vol. 10, pp. 21–29. Retrieved from the World Wide Web from: http://www.informaworld.com/smpp/content~content=a741921472~db=all~order=page</p>	<p>Explores present and potential links between gender and climate change, and the specific implications for gender of this phenomenon. It also provides examples of women organized for change on matters concerning sustainable development, specifically in constructing the World Summit on Sustainable Development. It shows how women's participation may translate into more sensitive results on the gender theme.</p>
<p>Dankelman, I., Alam, K., Bashir Ahmed, W., Diagne Gueye, Y., Fatema, N. and Mensah-Kutin, R. (2008). Gender, Climate Change and Human Security: Lessons from Bangladesh, Ghana and Senegal. WEDO, ABANTU for Development in Ghana, ActionAid Bangladesh and ENDA in Senegal.</p>	<p>This report consists of a review of general literature on gender, climate change and human security, and it gives examples of various case studies in Senegal, Ghana and Bangladesh.</p>
<p>Dennison, C. (2003). From Beijing to Kyoto: Gendering the International Climate Change Negotiation Process. Retrieved from the World Wide Web from: http://www.pugwash.org/reports/pac/53/dennison.htm</p>	<p>In spite of the efforts of the UN to mainstream the gender theme, its activities, debates and negotiations on climate change take a neutral stand in this respect. This document suggests that international negotiations will not be legitimate or efficient if the process does not take the theme of gender equity into account.</p>
<p>Denton, F. (2001). Climate Change, Gender and Poverty – Academic Babble or Realpolitik? Retrieved from the World Wide Web from: http://www.generoyambiente.org/admin/admin_biblioteca/documentos/FatmaDenton.pdf</p>	<p>What does gender have to do with all this? This is the rhetorical question with which the article begins. There is no doubt that climate change and its variables will have devastating effects on the lives of men and women. Climate change has been defined as a key phenomenon of our era – a group of events that may alter the lives of humanity in general. The document argues that climate change will accentuate even more the gaps between the world's rich and poor and, above all, will increase gender gaps.</p>
<p>Denton, F. (2004). Gender and Climate Change: Giving the “Latecomer” a Head Start. In: <i>IDS Bulletin</i>, 2004;35(3):42-49. Retrieved from the World Wide Web from: http://www.ids.ac.uk/ids/bookshop/bulletin/bull353abs.htm#gender</p>	<p>Concentrates on three sensitive areas on the theme of climate – agriculture, water and energy – and considers how adaptation strategies may be designed to help women and men in these sectors mitigate the effects of climate change. Suggestions include forest management projects that build new capacities to improve products, soil quality and water conservation.</p>

Reference

Description

Duddly, J. (2005). **Is Climate Change a Gender Issue?** AWID. Retrieved from the World Wide Web from: http://www.generoyambiente.org/admin/admin_biblioteca/documentos/Is%20climate%20change%20a%20gender%20issue.pdf

Underlines the severity of climate change, recognized by the scientific community but ignored by international policy makers. It reports the vulnerability of the Inuit community with respect to the effects of climate change now being felt, placing emphasis on impacts that affect women.

EDNA/IRADE. (2006). **Is the Gender Dimension of the Climate Debate Forgotten?** Retrieved from the World Wide Web from: http://www.generoyambiente.org/admin/admin_biblioteca/documentos/cop8_gender.pdf

Summarizes the UNFCCC COP 8 session on gender and climate change. It includes recommendations, lists of participants and key proposals to tackle the gender theme in this debate.

Gender CC. (2008). **Gender CC Contribution on REDD.** Submitted at UNFCCC COP 14, Poznan, 2008. Retrieved from the World Wide Web from: http://www.gendercc.net/fileadmin/inhalte/Dokumente/UNFCCC_conferences/COP14/Gendercc_submission_REDD.pdf

The document summarizes the position on REDD represented and submitted by Gender CC at the UNFCCC COP 14 in Poznan, 2008.

Global Environment Facility. (2008). **Mainstreaming Gender at the GEF.** Retrieved from the World Wide Web from: <http://www.gefweb.org/uploadedFiles/Publications/mainstreaming-gender-at-the-GEF.pdf>

The document analyzes the work carried out at GEF in terms of gender mainstreaming in the six focal areas; including also climate change. It provides examples of projects, identified best practices and lessons learned.

Gurung, J., Mwanundu, S., Lubbock, A., Harti, M. and Firmian, I. (2006). **Gender and Desertification: Expanding Roles for Women to Restore Drylands.** IFAD. Retrieved from the World Wide Web from: http://www.generoyambiente.org/admin/admin_biblioteca/documentos/gender_desert.pdf

The authors argue that in many of the world's dry regions, women's knowledge, as well as the traditional roles they play in managing natural resources and food security, are crucial. However, women are often excluded from participating in land conservation, in development projects and in policy making.

Hartmann, B. (2007). **Género, militarismo y cambio climático.** IADE. Retrieved from the World Wide Web from: http://www.generoyambiente.org/admin/admin_biblioteca/documentos/generomilitar.pdf

At present, at the international policy level, the absence of the gender approach in debate about climate change is cause for concern. Recent studies and feminist campaigns challenge the invisibility of gender, in particular pointing out gender differences in vulnerability and adaptation to global warming.

Hemmati, M. (2005). **Gender and Climate Change in the North: Issues, Entry Points and Strategies for the Post-2012 Process.** Genanet. Retrieved from the World Wide Web from: http://www.generoyambiente.org/admin/admin_biblioteca/documentos/Genderkyotopost.pdf

The author, who is the Genanet Focal Point for Gender Justice and Sustainability, treats relevant aspects of the gender theme and climate change, principally in industrialized countries in the North. She seeks to stimulate strategic considerations for women's organizations in Germany, Europe and the region in general, within the framework of the preparations being made for global regime negotiations on climate change post-2012.

Hoddinott, J. and Kinsey, B. (2000). **Adult Health in the Time of Drought. International Food Policy Research.** Institute Discussion Paper. Retrieved from the World Wide Web from: <http://www.ifpri.org/divs/fcnd/dp/papers/dp79.pdf>

This document analyzes the impact of the drought of 1994–95 on the health of adults in rural zones in Zimbabwe.

Reference	Description
IPADE. (n.d.). El cambio climático y los Objetivos de Desarrollo del Milenio. Retrieved from the World Wide Web from: http://www.pobrezacero.org/objetivos/documentos/cambio_climatico_odm.pdf	Explains how the Millennium Development Goals (MDG) are closely linked to protecting the environment and to the fight against poverty. Above all, each of the MDGs has a specific relationship to climate change, since this has a direct bearing on the possibility of reaching them. Therefore, reaching the MDGs is being affected by changes in climate and their associated effects, and this worsens the poverty of the most vulnerable groups.
Lambrou, Y. and Piana, G. (2006). Gender: The Missing Component of the Response to Climate Change. Retrieved from the World Wide Web from: http://www.generoyambiente.org/admin/admin_biblioteca/documentos/pe1_051001d1_en.pdf	This report argues that gender, like poverty, is a transversal matter within climate change, and needs to be recognized as such. The conclusions show that gender considerations have, in general, been ignored by international policies on climate. It is only in recent years, with the Sessions of the UNFCCC COP 8 (held in New Delhi in October 2002) and COP 9 (held in Milan in December 2003), that gender was, incidentally, tackled.
Laub, R. and Lambrou, Y. (2004). Gender Perspectives on the Conventions on Biodiversity, Climate Change and Desertification. FAO Gender and Population Division. Retrieved from the World Wide Web from: http://www.generoyambiente.org/admin/admin_biblioteca/documentos/genderconventions.pdf	Explains how in the Conventions on Biological Diversity, Climate Change and Desertification, as well as in the execution mechanisms, the gender perspective is not given equal treatment. The objective of this document is to reaffirm the pertinence of adopting a gender perspective in the Multilateral Environment Agreements (MEA).
Masika, R. (Ed.) (2002). Gender, Development, and Climate Change. Oxfam. Retrieved from the World Wide Web from: http://publications.oxfam.org.uk/oxfam/display.asp?K=9780855984793&sf_01	This book considers the dimensions of gender in climate change. It suggests that neither the analysis of gender, nor the close connection of this theme with poverty, has been considered in international debates. It also shows the importance of taking the gender theme into account when attempting to understand the impact global environment change has on human communities.
Neumayer, E. and Plümper, T. (2007). The Gendered Nature of Natural Disasters: The Impact of Catastrophic Events on the Gender Gap in Life Expectancy, 1981–2002. Retrieved from the World Wide Web from: http://www.generoyambiente.org/admin/admin_biblioteca/documentos/schooleconomis.pdf	Disasters do not affect everyone in the same way. Broaching the theme from the point of view of vulnerability suggests that inequity as to risk conditions, access to resources and opportunities and capacities are different for men and women. The central theme of the document is an analysis of the vulnerabilities of women and girls who tend to suffer more from the negative consequences of disasters.
BothENDS. (2007). Adapting to climate change: What's needed in poor countries, and who should pay? Retrieved from the World Wide Web from: http://www.generoyambiente.org/admin/admin_biblioteca/documentos/bp-adapting_to_climate_change-0708.pdf	Climate change is forcing communities in poor countries to adapt to an unprecedented impact. Rich countries, that bear most of the blame for the problem, must stop causing damage – by reducing emissions of greenhouse gases – and begin to help by providing funds for adapting to the change. OXFAM calculates that, in developing countries, such an adaptation will cost a minimum cost of US\$50,000 million a year. This figure may rise significantly if global emissions are not quickly reduced.
Rivero, R. (2002). Gendering Responses to El Niño in Rural Peru. In: <i>Gender & Development</i> , Vol. 10, pp. 60–69. Retrieved from the World Wide Web from: http://www.informaworld.com/smpp/content~content=a741921478~db=all~order=page	Reflects on lessons learned about the gender approach at the Centre for Andean Advancement and Development (CEPRODA MINGA). This was during the author's work with poor communities in the region of Piura, Peru, after the El Niño phenomenon in 1997–8. It centres on the traditional ways that rural communities, and women in particular, have been excluded from policy making and considers how they may become more influential political and social stakeholders, creating their own sustainable development and mitigation strategies.

Reference

Description

Röhr, U. (2004). **Gender Relations in International Climate Change Negotiations**. Genanet. Retrieved from the World Wide Web from: http://www.generoyambiente.org/admin/admin_biblioteca/documentos/Gender_climate_policy_en_updated.pdf

Gender equity is not mentioned in the UNFCCC, even though it is an integral part of Agenda 21. It was not until the Kyoto Protocol instruments were created, specifically the Clean Development Mechanism (CDM) that gender considerations began to attract the interest of specialists on the subject. Since then, the focus of most of the positions adopted and analyses made from a gender perspective have concentrated exclusively on women in developing countries. It is in these countries where the CDM projects are being undertaken and where there are more women's networks in the energy field.

Röhr, U., Alber, G., Skutsch, M., Rose, J. and van der Heul R. (2004). **Mainstreaming Gender into the Climate Change Regime**. Retrieved from the World Wide Web from: http://www.generoyambiente.org/admin/admin_biblioteca/documentos/Gender_and_climate_change_COP10.pdf

Declaration of the Women's Caucus during UNFCCC COP 10, held in Buenos Aires, Argentina. The authors state that the UN has made a formal commitment to mainstream the gender approach in all its policies and programmes; nevertheless, this organization still does not understand why gender is a factor that ought to be considered in climate change, or how it should be included.

Röhr, U. and Hemmati, M. (2006). **Why it Makes a Difference: Gender and Climate Change at COP11/MOP1**. Results from UNFCCC COP 11. Retrieved from the World Wide Web from: <http://www.wecf.de/cms/articles/2006/01/montreal.php>

Presents an analysis of results obtained by a group of women at the UNFCCC Conference of the Parties in Montreal (COP-11/MOP1). It treats the gender theme in debates and negotiations on climate change.

Röhr, U., Spitzner, M., Stiefel, E., and Winterfeld, U. (2008). **Gender justice as the basis for sustainable climate policies**. Retrieved from the World Wide Web from: http://www.gendercc.net/fileadmin/inhalte/Dokumente/UNFCCC_conferences/COP14/Gender_Justice_CC_en-final.pdf

It examines the topic of gender justice and climate looking at the following aspects: the concepts of justice are not per se fair in regard to gender but rather are the expression of a reality characterized by a gender hierarchy. Thus a critical feminist analysis is offered which, at the same time, examines whether approaches aimed at achieving justice will more likely contribute to a continuation or to a change in the prevailing relationships.

Skutsch, M. (2002). **Protocols, Treaties, and Action: The Climate Change Process Viewed through Gender Spectacles**. In: *Gender & Development*, Vol. 10, pp. 30–39. Retrieved from the World Wide Web from: <http://www.informaworld.com/smpp/content~content=a741921471~db=all~order=page>

This research begins by evaluating the extent to which gender considerations have been taken into account in international processes on developing climate change policies. It explores whether there are significant considerations of gender in relation to (a) emissions of greenhouse gases, (b) vulnerability to climate change, and (c) participation in projects that finance efforts concerning climate. It concludes by suggesting areas of attention in which the gender perspective could improve the effectiveness of interventions with respect to climate and that also benefit women.

The World Bank. (2004). **Engendering Information & Communication Technologies**. Retrieved from the World Wide Web from: <http://siteresources.worldbank.org/INTGENDER/Seminar-Series/20260878/ictbrochure.pdf>

This document establishes the linkages between ICT and gender equality. It demonstrates how ICT can promote gender equality providing concrete project examples. It offers recommendations on the base of the lessons learned in the work of The World Bank.

UNDP. (2008). **Guía: Recursos de Género para el Cambio Climático**. Mexico. Retrieved from the World Wide Web from: http://www.generoyambiente.org/admin/admin_biblioteca/documentos/guiaccpnud.pdf

The Guide makes an appeal for the harmonization of international agendas on gender equality and climate change, and offers a view of the contemporary debate, research and practice regarding gender and climate change as an integrated discipline. The Guide is an instrument that intends to go from isolated actions to an articulated scheme that will make the participation on climate change issues from a gender perspective more effective and efficient.

Reference	Description
Villagrasa, D. (2002). Kyoto Protocol Negotiations: Reflections on the Role of Women. In: <i>Gender & Development</i> , Vol. 10, pp. 40–44. Retrieved from the World Wide Web from: http://www.informaworld.com/smpp/content~content=a741921479~db=all~order=page	Briefly analyzes the three communities that have shaped the Kyoto Protocol, the United Nations Framework Convention on Climate Change (UNFCCC), and the role of the gender approach in these discussions. The first community is that of government delegations, the most important negotiators. The second consists of business representatives, and the third is made up of environmental NGOs.
Wamukonya, N. and Rukato, H. (2001). Climate Change Implications for Southern Africa: A Gendered Perspective. Retrieved from the World Wide Web from: http://www.generoyambiente.org/admin/admin_biblioteca/documentos/wamukonyarukato.pdf	South Africa's ability to adapt to climate change depends on whether resources, both financial and human, are available. Its geographic location and political situation could affect its capacity to respond. This document analyzes the implications of climate change for that country, from a gender perspective.
Wamukonya, N. and Skutsch, M. (2002). Gender Angle to the Climate Change Negotiations. In: <i>Energy & Environment</i> , Vol. 13, No. 1, pp.115–124 (10). Retrieved from the World Wide Web from: http://www.ingentaconnect.com/content/mscp/ene/2002/00000013/00000001/art00007	The South, given its vulnerable situation and the lack of resources to adapt to change, is more likely to suffer from the impacts of climate change than is the North. But, do the different interests of men and women with respect to climate change have a South-North dimension?
Women in Europe for a Common Future (WECF). (2005). Gender and Climate Change Research Workshop: What Do We Know? What Do We Need to Find Out? Retrieved from the World Wide Web from: http://www.siyanda.org/static/wecf_gender_climatechange_workshop.htm	Proceedings of the discussions between experts, both women and men, on gender and climate change research. Emphasizes women's role and their impact on gender policies in the UNFCCC.
Women's Environment and Development Organization (WEDO). (2003). Untapped Connections: Gender, Water and Poverty. Retrieved from the World Wide Web from: http://www.generoyambiente.org/admin/admin_biblioteca/documentos/untapped.pdf	Includes an analysis of how the theme of water, gender and poverty has been included in international treaties, in governments' action plans, as well as the implications at local level. Case studies on the theme are also presented.
Women and Environments International Magazine. (2007). Women and Global Climate Change. No. 74/75 Spring/Summer 2007. Retrieved from the World Wide Web from: http://www.weimag.com/	The international magazine Women and Environments examines, from a feminist perspective, how women relate to their environments – natural, constructed and social. This volume is dedicated to the theme of women and climate change; it contains information on related matters, such as health, droughts, adaptation and mitigation, energy and case studies on the theme.
Women's Group Statement on Gender and Climate Change, presented at the UNFCCC meeting in Montreal. (2005). Global Warming: Women Matter! Retrieved from the World Wide Web from: http://www.generoyambiente.org/admin/admin_biblioteca/documentos/genderstatementUNFCCC.pdf	Describes the position of the Group of Women on Gender and Climate Change, presented at the UNFCCC meeting held in Montreal in November 2005.
World Economic Forum. (2007). The Global Gender Gap Report. Retrieved from the World Wide Web from: http://www.weforum.org/pdf/gendergap/report2007.pdf	Contains data that show the degree of equality between the genders in different sectors of society. It covers 128 countries, representing more than 90% of the world population.

3. Energy and gender

Reference	Description
Annecke, W. (2002). Climate change, energy-related activities and the likely social impacts on women in Africa. In: International Journal of Global Environmental Issues (IJGENVI), Vol. 2, No. 3-4. Retrieved from the World Wide Web from: http://www.inderscience.com/search/index.php?action=record&rec_id=2400&prevQuery=&ps=10&m=or	Seeks to establish links between climate change, energy use, gender relations and subsequent impacts on the daily life of women in Africa. There is a broad approach in an attempt to provide a perspective of the complexity of the factors considered in the analysis. Stress is placed on the difference between how energy is used in developed and developing countries and by men and women; the impact energy use has on climate change is explored. The most vulnerable energy sub-sector is the biomass used by the largest consumer group: poor women.
Brew-Hammond, A. and Crole-Rees, A. (2004). Reducing Rural Poverty Through Increased Access to Energy Services: A Review of the Multi-functional Platform Project in Mali. Retrieved from the World Wide Web from: http://www.energyandenvironment.undp.org/undp/index.cfm?module=Library&page=Document&DocumentID=5110	Reviews the experience of a multi-functional project in Mali. Analyzes documents on how modern energy services affect the lives of rural women in terms of income, education and social condition, as well as their health. It also makes analytical observations about important factors that affect relations between energy services and development results. It diagnoses the importance of the multi-functional concept for broader national and regional policies – within the framework of how development and energy can reduce poverty in Africa.
Ebrahimian, E. (2003). Community Action to Address Climate Change: Case Studies Linking Sustainable Energy Use with Improved Livelihoods. GEF-UNDP Small Grants Programme (SGP). Retrieved from the World Wide Web from: http://sgp.undp.org/download/SGPCaseStudiesBook.complete.pdf	This publication summarizes the key information about energy projects and climate change supported by the GEF Small Grants Programme between 1992 and 2003.
GEF-UNDP SGP. (2005). Solar Energy Power for Socio-Economic Advancement of Women in Selected Communities in the Northern Region. Ghana. Retrieved from the World Wide Web from: http://sgp.undp.org/index.cfm?Module=Projects&Page=ShowProject&ProjectID=7466	The project introduces solar electricity in the region, giving rural women an alternative energy source to develop economic activities. Some women were trained in building and using solar driers to process shea butter. Solar energy was also used to establish a rural information centre where women, boys and girls attended literacy night classes.
GEF-UNDP SGP. (2005). Estación micro-hidroeléctrica para el procesamiento de fibra natural (lanas) en Agua Blanca, Bolivia (Micro-hydroelectric station to process natural fibre (wool) in Agua Blanca, Bolivia). Retrieved from the World Wide Web from: http://sgp.undp.org/index.cfm?Module=Projects&Page=ShowProject&ProjectID=7229	The project's objective was to provide energy to the Agua Blanca community by building a hydroelectric generating station. The energy produced was used to process alpaca wool for production, and to operate drying machines, dyeing centrifuges and textile machines. The project helped a group of women with their activities by giving them equipment and better production conditions, allowing them to invest more time in their work and to set up a community micro-enterprise. The micro-enterprise allows them to earn more so as to improve living conditions for their families.
GEF-UNDP SGP. (2005). Scaling Up Animal Husbandry Practices as Sustainable Livelihoods, Empowering Women through Credit, Self-Help and Alternative Fuels/Energy Sources. India. Retrieved from the World Wide Web from: http://sgp.undp.org/index.cfm?Module=Projects&Page=ShowProject&ProjectID=9240	The project's main objective was to promote biogas as an alternative fuel for domestic use, and reduce pressure on forests as well as carbon emissions. It was directly focussed on women, given that they traditionally work in the kitchen and use firewood to cook. Biogas plants were built and they are now administered by women and men. By using less firewood for fuel, the project helped to conserve biodiversity and reduce deforestation. It also helped groups of rural women to improve their earnings by raising animals.

Reference	Description
<p>GEF-UNDP SGP. (2005). Utilizing Solar Energy for Drying Agricultural Crops in Khuza'a Village by Distributing Crop Driers for 60 Women. Palestine. Retrieved from the World Wide Web from: http://sgp.undp.org/index.cfm?Module=Projects&Page=ShowProject&ProjectID=7414</p>	<p>Local experts designed and manufactured sixteen solar dryers for crops. Sixty women in the community directly benefited from the project, and another 360 women received indirect benefits. They were able to earn a modest US\$200 per season, depending on what agricultural products were available at the time, which varied from medicinal plants to vegetables and dates. The results of the workshop were sustained after the project ended. Seventy solar dryers, financed by other donors, have been set up in Gaza city.</p>
<p>Genanet. (n.d). A Powerful Connection: Gender and Renewables. Gender Perspectives in Industrialized Countries. Retrieved from the World Wide Web from: http://www.generoyambiente.org/admin/admin_biblioteca/documentos/leaflet_gender_and_renewables.pdf</p>	<p>Explores gender considerations in renewable energy production and initiatives now being implemented.</p> <p>Makes a number of recommendations.</p>
<p>Misana, S. and Karlsson, G. (2001). Generating Opportunities: Case Studies on Energy and Women. In: <i>Newsletter of the network for gender and sustainable energy</i>, Vol. 4. 2001. Retrieved from the World Wide Web from: http://www.energyandenvironment.undp.org/undp/index.cfm?module=Library&page=Document&DocumentID=5030</p>	<p><i>Generating Opportunities</i> is a book describing eight case studies in Africa and Asia about women and energy. Gives concrete examples of how to give women living in poverty better access to clean energy and economic services. The most important aspects considered in the publication, based on lessons learnt from the case studies, are how to design policies and programmes to improve rural women's access to modern energy supplies.</p>
<p>Modi, V., McDade, S., Lallement, D. and Saghir, J. (2005). Energy Services for the Millennium Development Goals. UN Millennium Project. Retrieved from the World Wide Web from: http://www.generoyambiente.org/admin/admin_biblioteca/documentos/MP_Energy_Low_Res.pdf</p>	<p>Within the framework of the MDGs, this document discusses the theme of energy services to achieve these goals; it also suggests a practical strategy to provide energy services to the poorest populations.</p>
<p>Rossi, A. and Lambrou, Y. (2008). Gender and equity issues in liquid biofuels production: minimizing the risks to maximize the opportunities. FAO. Retrieved from the World Wide Web from: http://www.generoyambiente.org/admin/admin_biblioteca/documentos/Gender%20and%20Equity%20Issues%20in%20Liquid%20Biofuels%20Production.2008%20FAO.pdf</p>	<p>This book explores risks that are different depending on gender and are associated with large-scale production of the first generation of liquid biofuels in developing countries. Its objective is to open a debate on risks, and to identify research and policy strategies to confront them, in order to take maximum advantage of the opportunities that biofuels offer.</p>
<p>UNDP/UN-DESA/World Energy Council. (2000). World Energy Assessment: Energy and the Challenge of Sustainability. Retrieved from the World Wide Web from: http://www.energyandenvironment.undp.org/undp/index.cfm?module=Library&page=Document&DocumentID=5037</p>	<p>This publication gives state-of-the-art information on social, economic and environmental aspects, as well as on security questions linked to energy. It analyzes how energy may serve as an instrument to achieve sustainable human development.</p>
<p>UNDP, The International Institute for Industrial Environmental Economics (IIIEE) and The International Energy Initiative (IEI). (2002). Energy for Sustainable Development: A Policy Agenda. Retrieved from the World Wide Web from: http://www.energyandenvironment.undp.org/undp/index.cfm?module=Library&page=Document&DocumentID=5028</p>	<p>As a follow-up to the World Energy Assessment, this publication concentrates on policy making and its effective application to accelerate the growth of energy systems that support sustainable development.</p>

Reference

Description

UNDP. (2004). **The World Energy Assessment: Overview.** Retrieved from the World Wide Web from: http://www.undp.org/energy/docs/WEAOU_full.pdf

Shows the links between energy and the MDGs. Describes the discussions and results of the CSD-9 and the World Summit for Social Development. It also includes the most up-to-date trends and information on technology related to the energy sector and energy policy options for a sustainable future.

UNDP. (2005). **Energizing the Millennium Development Goals.** Retrieved from the World Wide Web from: http://www.undp.org/pei/pdfs/Energizing_the_MDGs.pdf

Explains that the poor spend most of their time on energy-related activities such as collecting firewood, even when modern energy services are available to relieve their burden. This publication takes a look at the relation between energy and development and discusses how energy is related to the MDGs.

UNDP Ghana. (2006). **Liquefied Petroleum Gas (LPG) Substitution for Wood Fuel.** Retrieved from the World Wide Web from: <http://www.energyandenvironment.undp.org/undp/index.cfm?module=Library&page=Document&DocumentID=5743>

The project motivated and facilitated the use of liquefied petroleum gas (LPG) for fuel as a substitute for firewood and coal. It also supported marketing and making LPG available to supplement communities' energy needs in three regions in the north of Ghana. As a result, 600 domestic users were trained (in using LPG) of whom 500 were women; four LPG users' associations were created with 480 members of whom 289 were women; 54 companies using energy were interviewed of which 43 were operated by or belonged to women; training was given to 45 female and male commercial food sellers.

UNDP. (2007). **Conceptual Overview. Gender Mainstreaming: A Key Driver of Development in Environment and Energy.** Retrieved from the World Wide Web from: <http://www.energyandenvironment.undp.org/undp/indexAction.cfm?module=Library&action=GetFile&DocumentAttachmentID=2315>

This document offers a first approach to including the gender perspective in UNDP programmes and policies in the main areas concerned with energy and the environment: (1) managing hydraulic resources, (2) access to energy services, (3) sustainable land management, (4) biological diversity, and (5) control of ozone-depleting substances and persistent organic pollutants.

UNDP. (2007). **Gender Mainstreaming. A Key Driver of Development in Environment and Energy: Portfolio Review and Assessment.** Retrieved from the World Wide Web from: <http://www.energyandenvironment.undp.org/undp/indexAction.cfm?module=Library&action=GetFile&DocumentAttachmentID=2342>

This report presents the conclusions of a study carried out between November 2005 and April 2006 to assess the nature and extent of the gender perspective in UNDP's Energy and the Environment portfolio including GEF and the Small Grants Programme.

UNDP. (2007). **Gender Mainstreaming in Environment & Energy: Training Manual – Part 1.** Retrieved from the World Wide Web from: <http://www.energyandenvironment.undp.org/undp/index.cfm?module=Library&page=Document&DocumentID=6514>

This document is part of a series of publications called *Gender Mainstreaming: A Key Driver of Development in Environment & Energy*. It is designed to help to understand the importance of including the dimensions of gender for sustainability of the environment and of energy.

UNDP. (2007). **Gender Mainstreaming in Environment & Energy: Training Manual – Part 2 for Facilitators.** Retrieved from the World Wide Web from: <http://www.energyandenvironment.undp.org/undp/index.cfm?module=Library&page=Document&DocumentID=6523>

This document is part of a series of publications called *Gender Mainstreaming: A Key Driver of Development in Environment & Energy*. In particular, the manual supports training facilitators to include the gender approach in the themes of energy and the environment.

UNDP. (2007). **Sustainable Energy Services: The Why and How of Mainstreaming Gender in Sustainable Energy Services.** Retrieved from the World Wide Web from: <http://www.energyandenvironment.undp.org/undp/index.cfm?module=Library&page=Document&DocumentID=6460>

This document is part of a series of publications called *Gender Mainstreaming: A Key Driver of Development in Environment & Energy*. This guide explains the importance of the gender approach in sustainable energy policies and programmes.

Reference	Description
Wamukonya, N. (2002). A Critical Look at Gender and Energy Mainstreaming in Africa: A Draft Paper . Retrieved from the World Wide Web from: http://www.generoyambiente.org/admin/admin_biblioteca/documentos/Njeripaper.pdf	Document delivered at a parallel event to the Pre Com III meeting called Gender Perspectives in Sustainable Development, organized by UNDESA/ DAW and WEDO. It takes a critical look at mainstreaming of a gender perspective and energy themes in Africa.
Women's Major Group. (2006). Engendering the Energy and Climate Change Agenda . Discussion paper for CSD-14. Retrieved from the World Wide Web from: http://www.generoyambiente.org/admin/admin_biblioteca/documentos/CSD14WMG.pdf	This report is prepared with joint contributions from the International Network on Gender and Sustainable Energy (ENERGIA), the Women's Environmental Network (LIFE), WECF, the International Union for Conservation of Nature (IUCN) and WEDO, in consultation with women's organizations throughout the world, within the framework of CSD-14. It deals with the relation between energy and climate change with respect to matters concerning gender in the context of proposals for international action.

4. Mitigation and adaptation

Reference	Description
All India Disaster Mitigation Institute. (2005). Tsunami, Gender and Recovery . In: <i>Bulletin No. 6. Special edition for the International Day for Natural Disaster Reduction</i> . Retrieved from the World Wide Web from: http://www.southasiadisasters.net/whatsnew.htm	This special edition treats the gender theme in the recovery plans of the tsunami that affected Asia in 2005. These plans are given a critical analysis since, as they lack gender considerations, they may have a negative impact on women.
Boyd, E. (2002). The Noel Kempff Project in Bolivia: Gender, Power, and Decision-Making in Climate Mitigation . In: <i>Gender & Development</i> , Vol. 10, Issue 2. Retrieved from the World Wide Web from: http://www.informaworld.com/smpp/content~content=a741921481~db=all~order=page	Since the Kyoto Protocol, at the heart of the international debate on climate change has been emphasis on the use of land and forests to reduce carbon dioxide in the atmosphere. This technical project has sought to provide the benefits of sustainable development to people dependent on forests, as well as reducing emissions of greenhouse gases. The author explores this theory, considering how a climate mitigation project in Bolivia has had different results for women and men, and also links global policy-making processes and their local effects.
Cannon, T. (2002). Gender and Climate Hazards in Bangladesh . In: <i>Gender & Development</i> , Vol. 10, pp. 45-50. Retrieved from the World Wide Web from: http://www.informaworld.com/smpp/content~content=a741921480~db=all~order=page	Bangladesh has recently experienced high-profile disasters, including devastating cyclones and annual floods. Poverty causes vulnerability and is also a consequence of the disasters' impacts and risks. So far there is no conclusive evidence that the impacts of disasters are greater for women than for men, and the evidence varies according to how the analysis is carried out. However, the document suggests that vulnerabilities due to gender may be reduced by making social changes.
Castro, C. and Reyes, L. (2006). Desastres Naturales y Vulnerabilidad de las Mujeres en México . México. Retrieved from the World Wide Web from: http://cedoc.inmujeres.gob.mx/php_general/muestra_docto.php?ID=100834	This is among the first research done on the theme in Mexico. It seeks to include the perspective of Integral Disaster Risk Management and gender equity in public policy and in civil protection activities.
CATHALAC, UNDP/GEF. (2007). Capacity Building for Stage II Adaptation to Climate Change in Central America, Mexico and Cuba . Retrieved from the World Wide Web from: http://www.gefweb.org/Documents/Council_Documents/GEF_C18/Regional_Capacity_Building_for_Stage_II_Adaptation.pdf	The project's objectives are: to strengthen the systemic, institutional and individual capacity of key stakeholders to assess vulnerability and to adapt to the impacts of climate change, including climate variations, to risks and extreme events in regional, national and local priority systems. It also strengthens the institutional and individual systemic capacity of key stakeholders to develop strategies, implement policies and make preparations for regional, national and local adaptation.

Reference

Description

Denton, F. (2002). **Climate Change Vulnerability, Impacts, and Adaptation: Why Does Gender Matter?** In: *Gender & Development*, Vol. 10, pp. 10-20. Retrieved from the World Wide Web from: <http://www.informaworld.com/smpp/content~content=a741921483~db=all~order=page>

Argues that if policies on climate change seek to ensure a sustainable future by combining development questions and the environment, account should be taken of the needs of all the different interest groups. It also suggests that the Environment Global Fund of the Kyoto Protocol may play an important role in ensuring sustainable development, and might be implemented in such a manner that it does not result in disadvantages for women or for the poorest people.

Gross, R., Dougherty, B. and Kumarsingh, K. (2004). **Conducting Technology Needs Assessments for Climate Change**. UNDP. Retrieved from the World Wide Web from: <http://www.energyandenvironment.undp.org/index.cfm?module=Library&page=Document&DocumentID=5232>

This manual shows a flexible approach to prioritize the needs of technology and the application of practices and reforms needed to reduce greenhouse gas emissions and adapt to climate change. It is mainly intended for developing countries.

Hannan, C. (2002). **Mainstreaming Gender Perspectives in Environmental Management and Mitigation of Natural Disasters**. Division for the Advancement of Women (DAW). Retrieved from the World Wide Web from: http://www.generoyambiente.org/admin/admin_biblioteca/documentos/presnat.PDF

Discusses, in broad terms, how women are involved in disaster management and mitigation processes. It analyzes the mainstreaming of gender in mitigation and adaptation strategies, risk analysis, and the response to and management of emergencies.

Herrmann, T., Ronneberg, E., Brewster, M. and Dengo, M. (2005). **Social and Economic Aspects of Disaster Reduction, Vulnerability and Risk Management in Small Island Developing States**. Retrieved from the World Wide Web from: http://www.generoyambiente.org/admin/admin_biblioteca/documentos/smallislands.pdf

This research describes the impact of disasters on women, as well as the central role they play in many cultures in managing disasters. It discusses that women are an important force for change and, therefore, need to have their capacities strengthened.

International Institute for Sustainable Development (IISD). (2003). **Livelihoods and Climate Change: Combining disaster risk reduction, natural resource management and climate change adaptation in a new approach to the reduction of vulnerability and poverty**. IUCN, IISD, Stockholm Environment Institute (SEI), the Swiss Agency for Development Cooperation (SDC) and Intercooperation (the Swiss Foundation for International Development and Cooperation). Retrieved from the World Wide Web from: http://www.generoyambiente.org/admin/admin_biblioteca/documentos/iisd2003.pdf

This document attempts to provide a framework for research and policy making, and community groups that try to adopt decisions on adaptation.

IISD. (2007). **CRISTAL: Community-based Risk Screening – Adaptation and Livelihoods**. IISD, IUCN, SEI-US and Intercooperation. Retrieved from the World Wide Web from: http://www.iisd.org/pdf/2007/brochure_cristal.pdf

CRISTAL is a support tool developed jointly by IISD, IUCN, SEI-US and Intercooperation. This tool is based on the Environmental Impact Assessment (EIA) and the sustainable living model (SLF). Its main objective is to provide a rationale and an easy process that can help users to better understand the links between risks related to climate, people's lives and the projects' activities.

Reference	Description
Jones, R., Hassell, D., Hudson, D., Wilson, S., Jenkins, G. and Mitchell, J. (2004). Generating High Resolution Climate Change Scenarios Using PRECIS. Handbook. UNDP/GEF National Communications Support Unit. Retrieved from the World Wide Web from: http://ncsp.undp.org/docs/652.pdf	This manual is part of a package prepared in collaboration with the Hadley Centre that includes a Regional Climate Model and a Technical Manual. The final objective of the guide is to describe steps that need to be taken to prepare, using PRECIS, high-resolution climate change scenarios.
Lim, B. (2005). Adaptation Policy Frameworks for Climate Change: Developing Strategies, Policies and Measures. UNDP-GEF. Retrieved from the World Wide Web from: http://www.undp.org/gef/05/kmanagement/pub_practitioner.html	This document is designed to support the process of developing adaptation policies in countries so as to protect and increase human wellbeing in the face of climate change.
Malone, E.L., Smith, J.B., Brenkert, A.L. and Hurd, B. (2004). Developing Socio-Economic Scenarios for Use in Vulnerability and Adaptation Assessments Publication. UNDP. Retrieved from the World Wide Web from: http://www.energyandenvironment.undp.org/undp/index.cfm?module=Library&page=Document&DocumentID=5233	The manual's purpose is to help countries develop socio-economic scenarios in relation to the Adaptation Policy Framework (UNDP, 2004). This is to analyze vulnerability and adaptation as part of its National Communications.
Nelson, V., Meadows, K., Cannon, T., Morton, J. and Martin, A. (2002). Uncertain Predictions, Invisible Impacts, and the Need to Mainstream Gender in Climate Change Adaptations. In: <i>Gender & Development</i> , Vol. 10, pp. 51–59. Retrieved from the World Wide Web from: http://www.informaworld.com/smpp/content~content=a741921482~db=all~order=page	Vulnerability to environmental degradation and natural dangers is mentioned with social, poverty and gender aspects. Because many areas of development policies and practices do not include the gender perspective in an efficient manner, the potential impacts of climate change on gender relations have not been studied and remain out of sight. This article highlights predictions on climate change and explores its long-term effects on agriculture, ecological systems and gender relations. It asks that gender analysis be included in public policy making.
Oxfam. (2005). The Tsunami's Impact on Women. Briefing Note. Retrieved from the World Wide Web from: http://www.generoyambiente.org/admin/admin_biblioteca/documentos/tsunamiwomen.pdf	Gives examples of the social impact of the tsunami of 2004 in Indonesia, India and Sri Lanka. Although not caused by climate change, it had a devastating effect, particularly on women. Includes recommended action to be taken to ensure the needs of men and women are met, and that the disproportionate impacts on women are taken into account in the recovery process.
Oxford University's Refugee Studies Centre and United Nations Environment Programme (UNEP). (2008). Climate Change and Displacement. Forced Migration Review, issue 31, October 2008, 80 pp. Retrieved from the World Wide Web from: http://www.fmreview.org/climatechange.htm	In response to growing pressures on landscapes and livelihoods, people are moving, communities are adapting. This issue of FMR debates the numbers, the definitions and the modalities – and the tension between the need for research and the need to act. Thirty-eight articles by UN, academic, international and local actors explore the extent of the potential displacement crisis, community adaptation and coping strategies, and the search for solutions.
UNDP-GEF SGP. (2003). Responding to Climate Change, Generating Community Benefits. Retrieved from the World Wide Web from: http://sgp.undp.org/download/SGPCC.pdf	This publication shows the experiences and lessons learnt from the SGP portfolio of community projects on climate change.

Reference

Description

UNDP-GEF SGP. (2007). **Environmentally Sustainable Transport and Climate Change: Experiences and Lessons from Community Initiatives**. Retrieved from the World Wide Web from: <http://www.energyandenvironment.undp.org/undp/indexAction.cfm?module=Library&action=GetFile&DocumentAttachmentID=2037>

The result of systematizing the experiences of 65 sustainable transport community projects, financed by the GEF Small Grants Programme. This publication describes lessons and experiences that show the important role played by community initiatives in finding sustainable solutions for transportation needs.

UNDP, UNEP, World Bank, ADB, AfDB, GTZ, DFID, OECD and EC. (2003). **Poverty and Climate Change: Reducing the Vulnerability of the Poor Through Adaptation**. Retrieved from the World Wide Web from: http://ec.europa.eu/development/icenter/repository/env_cc_varg_poverty_and_climate_change_en.pdf

The document centres around the impact of climate change on the fight against poverty, within the context of advances made towards meeting the Millennium Development Goals and the follow-up stage. It discusses how to incorporate and integrate adaptation to climate change in the fight against poverty and the efforts towards achieving sustainable development.

Roy, M. and Venema, H. (2002). **Reducing Risk and Vulnerability to Climate Change in India: The Capabilities Approach**. In: *Gender & Development*, Vol. 10, pp. 78–83. Retrieved from the World Wide Web from: <http://www.informaworld.com/smpp/content~content=a741921476~db=all~order=page>

Argues that the ability of women to adapt to climate change pressures could be improved if they had the capacity to direct development efforts. By using this approach, women will improve their living conditions and will be more prepared as agents for change in their communities. This argument is based on previous research on gender and living conditions, and on a study carried out in rural zones in India.

UNDP/GEF. (2002). **Pioneering the Low Carbon Future. Sustaining Livelihoods: Experiences from UNDP-GEF Projects in Climate Change & Ozone Depletion**. Retrieved from the World Wide Web from: http://www.undp.org/gef/undp-gef_publications/publications/climate_change_brochure.pdf

This leaflet is part of the UNDP/GEF series Lessons for the Future. It gives the most outstanding examples of UNDP/GEF projects on climate change and the depletion of the ozone layer in Brazil, Jordan, Ghana and Guatemala.

UNDP Energy and Environment Group. (2006). **The Clean Development Mechanism: An Assessment of Progress**. Retrieved from the World Wide Web from: <http://www.energyandenvironment.undp.org/undp/indexAction.cfm?module=Library&action=GetFile&DocumentAttachmentID=1859>

This report examines the experiences with the CDM during its first years of operations (from 2002 to mid-2006) and assesses how its growth and evolution have progressed to date.

UNDP. (2007). **Climate Change Adaptation: Knowledge Needs Survey**. Retrieved from the World Wide Web from: <http://www.energyandenvironment.undp.org/undp/indexAction.cfm?module=Library&action=GetFile&DocumentAttachmentID=2357>

This survey, circulated among government agencies, UN agencies, research institutes, universities, NGOs and the private sector, points out the need to establish national adaptation policies to reduce risks to the population. It also says that national development planning should contemplate climate change adaptation criteria. The capacity to develop national adaptation policies is considered to be a major challenge, more so than locating the funds needs for the purpose. The results of this survey will guide the contents of the Adaptation Learning Mechanism – ALM – a project to promote the exchange of adaptation experiences by using an open awareness platform.

UNDP. (2007). **The Other Half of Climate Change: Why Indonesia Must Adapt to Protect Its Poorest People**. Retrieved from the World Wide Web from: <http://www.energyandenvironment.undp.org/undp/index.cfm?module=Library&page=Document&DocumentID=6509>

The report analyzes the effects of climate change in Indonesia.

Reference	Description
UNDP Mexico. (2007). Endogenous Development Approach to Gender and Disaster Risk Reduction Issues – Building the Capacity of Indigenous Peoples to Address Disaster Risk and Gender Inequality. Retrieved from the World Wide Web from: http://www.energyandenvironment.undp.org/undp/indexAction.cfm?module=Library&action=GetFile&DocumentAttachmentID=2296	Presents a case study of the Local Risk Management Programme applied in various indigenous villages in the south of Mexico; this is considered good practice because, among other things, it uses an integrated approach. The programme gives women -- in particular, in indigenous communities in marginalized areas – the opportunity and the option of better managing risks, both to people as well as to their belongings.

B. Other resources

1. Guides and manuals

Reference	Description
Braatz, B.V.and Doorn, M. (2005). Managing the National Greenhouse Gas Inventory Process. (UNDP-GEF) National Communications Support Group. Retrieved from the World Wide Web from: http://ncsp.undp.org/docs/461.pdf	This manual is based on the principles of the IPCC inventory guides. It points out the importance of documenting and filing national inventories, as well as how to institutionalize them.
Climate Alliance. (2005). Climate for Change Toolkit. Retrieved from the World Wide Web from: http://www.siyanda.org/static/climate_alliance_toolkit.htm	Describes relevant protection tools, processes and procedures on climate and, specifically, on climate change, that may help to promote and support women in decision-making positions.
ENERGIA. (2005). Training Manual to Increase Understanding of Gender Aspects of Energy Use and Planning. Retrieved from the World Wide Web from: http://www.generoyambiente.org/admin/admin_biblioteca/documentos/genderfaceEnergy.pdf	Designed to raise awareness among development planners and project administrators to increase their capacity to include gender and energy in the planning cycle. Includes a range of gender tools specially designed to help users to identify gender aspects in energy problems.
Lu, X. (2006). Guidance on the Development of Regional Climate Scenarios for Vulnerability and Adaptation Assessments. National Communications Support Programme. Retrieved from the World Wide Web from: http://www.energyandenvironment.undp.org/undp/indexAction.cfm?module=Library&action=GetFile&DocumentAttachmentID=2259	This document underlines the importance of planning for clearly defining the information needs in climate scenarios. It gives a list of sources for scenario-building models, tools, data and guides.
Rannauro-Melgarejo, E. (2007). Manual: Convención sobre la eliminación de todas las formas de discriminación contra las mujeres y su protocolo facultativo CEDAW (Manual: Convention on the Elimination of All Forms of Discrimination against Women and its Optional Protocol CEDAW). SRE/UNIFEM/UNDP, México. Retrieved from the World Wide Web from: http://www.sre.gob.mx/substg/temasglobales/bibliotecav.htm	The publication describes the main elements of the Convention and its Optional Protocol, as well as the recommendations adopted by the CEDAW Committee of Experts for the States Parties to the Convention. There are guidelines for implementing its articles, as well as on the various stages of communicating violations and the investigative procedures outlined in the Optional Protocol.

Reference	Description
The World Bank. (2009). Engendering ICT Toolkit . Available on the World Wide Web at: http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTGENDER/EXTICTTOOLKIT/0,,menuPK:542826~pagePK:64168427~piPK:64168435~theSitePK:542820,00.html	The toolkit is divided into 10 sections and it contains checklists, evaluation tools, examples of good practices, and resources that can be used to incorporate gender into ICT projects and project components. The toolkit has been designed for general distribution to researchers, educators, and development practitioners.
UNDP. (2004). Energy and Gender for Sustainable Development: A Toolkit and Resource Guide . Retrieved from the World Wide Web from: http://www.generoyambiente.org/admin/admin_biblioteca/documentos/genderengtoolkit.pdf	This manual and reference guide contains tools to help development professionals identify the most relevant aspects to consider in order to achieve results on the theme of energy, considering the specific needs of women.
UNDP. (2005). Energizing the Millennium Development Goals: A Guide to Energy's Role in Reducing Poverty . Retrieved from the World Wide Web from: http://www.undp.org/pei/pdfs/Energizing_the_MDGs.pdf	This publication offers a review of the most pertinent issues regarding development and energy, and seeks to help development technicians to understand the role of energy services in achieving the MDGs, by asking questions and giving explanatory answers and examples.
UNDP. (2006). Guía transversalización de género en proyectos de desarrollo . Retrieved from the World Wide Web from: http://www.undp.org.mx/Doctos/Publicaciones/GUIA%20TRANSVERSALIZACION%20DE%20GENERO.pdf	A practical consultation tool to mainstream the gender approach in designing, implementing and assessing development projects. It contains conceptual themes, operational considerations and practical recommendations for development projects. It follows the sequence of UNDP projects, including identifying problems and opportunities to increase effectiveness in terms of gender mainstreaming.
UNDP and Gender and Water Alliance. (2006). Gender in Water Management: Resource Guide . Retrieved from the World Wide Web from: http://www.genderandwater.org/page/2414	This Resource Guide is a reference document to assist professionals and practitioners in the areas of gender and water, as well as people responsible for mainstreaming the gender approach in an institution, project or programme, and any other person or institution interested in the water sector and gender.
UNDP-UNEP-GEF National Communications Support Programme. (2006). NCSP RESOURCE KIT: The National Communications Process . Retrieved from the World Wide Web from: http://www.energyandenvironment.undp.org/undp/indexAction.cfm?module=Library&action=GetFile&DocumentAttachmentID=2263	This set of resources provides guidance to countries on planning the National Communication Process, applying techniques to keep an inventory of greenhouse effect gases and assessing mitigation.
UNDP. (2003). Mainstreaming Gender in Water Management: A Practical Journey to Sustainability: A Resource Guide . Retrieved from the World Wide Web from: http://www.undp.org/water/docs/resource_guide.pdf	This document is designed to support the integration of gender in the context of Integrated Management of Hydraulic Resources (IMHR). This approach is fundamental to achieving the MDGs, as well as to applying the Johannesburg Plan.

2. Information/Fact sheets

Reference	Description
Aguilar, L. (2004). Climate Change and Disaster Mitigation . Retrieved from the World Wide Web from: http://www.generoyambiente.org/admin/admin_biblioteca/documentos/Climate.pdf	Part of the series of fact sheets Gender Makes the Difference of the Office of IUCN Senior Adviser on Gender. It analyzes the gender approach on the theme of climate change and disaster mitigation.

Reference	Description
Aguilar, L. (2004). Energy . IUCN-Community Conservation Coalition. Retrieved from the World Wide Web from: http://www.generoyambiente.org/admin/admin_biblioteca/documentos/Energy.pdf	Part of the series of fact sheets <i>Gender Makes the Difference</i> of the Office of IUCN Senior Adviser on Gender. Explores the relation between gender and energy, both in energy sector initiatives and in relation to how women use different forms of energy.
Aguilar, L, Araujo, A. and Quesada Aguilar, A. (2007). Gender and Climate Change . Retrieved from the World Wide Web from: http://www.generoyambiente.org/admin/admin_biblioteca/documentos/Factsheet%20ClimateChange.pdf	Fact sheet presented at the UNFCCC COP 13, held in Bali in December 2007. Climate change does not affect women and men in the same way; it has, and will continue to have, a different impact depending on gender. Therefore, all aspects related to climate change (i.e., mitigation, adaptation, policy development and decision making) must include a gender perspective.
Aguilar, L, Araujo, A. and Quesada Aguilar, A. (2007). Reforestation, Aforestation, Deforestation, Climate Change and Gender . Retrieved from the World Wide Web from: http://www.generoyambiente.org/admin/admin_biblioteca/documentos/Factsheet%20Forestry.pdf	Fact sheet presented at the UNFCCC COP 13, held in Bali in December 2007. It is crucial to understand the role played by women when considering the complexity of the services provided by forests and rain forests to mitigate climate change. Strategies are now designed to: comprehend and take account of the different benefits women and men receive from forestry services; recognize gender differences in having access to and controlling knowledge about forest resources; and identifying significant differences in the access women and men have to decisions, institutions and economic opportunities related to forestry.
Araujo, A. and Quesada Aguilar, A. In collaboration with: Aguilar, L., Athanas, A. and McCormick, N. (2007). Gender and Bioenergy . Retrieved from the World Wide Web from: http://www.generoyambiente.org/admin/admin_biblioteca/documentos/Factsheet%20BioEnergy.pdf	Fact sheet presented at the UNFCCC COP 13, held in Bali in December 2007. Energy is a means of satisfying needs. Both women and men depend on energy for most of their daily activities, but they have different needs and roles; in addition, the different energy services have different impacts on men and women. In the past, the energy needs of women, and their lifestyles, were ignored. Both traditional fuels and modern energy services have certain limitations that may increase the problems women face.
Araujo, A. and Quesada Aguilar, A. In collaboration with: Aguilar, L. and Pearl, R. (2007). Gender Equality and Adaptation . Retrieved from the World Wide Web from: http://www.generoyambiente.org/admin/admin_biblioteca/documentos/Factsheet%20Adaptation.pdf	Fact sheet presented at the UNFCCC COP 13, held in Bali in December 2007. Vulnerabilities are socially built and are different for different groups of people. Women can be more vulnerable to the negative impacts of natural disasters because of their socio-economic position in societies.
Genanet. (n.d.). Energy from the Gender Perspective . Retrieved from the World Wide Web from: http://www.genanet.de/fact_sheets.html?&L=1	Part of the series of fact sheets <i>Gender and Sustainability</i> . It discusses three specific themes: attitudes toward nuclear energy; how work in the energy sector is divided in society; and the economic participation of women and men in the renewable energy sector.
Genanet. (n.d.). Gender Justice in Climate Protection . Retrieved from the World Wide Web from: http://www.genanet.de/fact_sheets.html?&L=1	Part of the series of fact sheets <i>Gender and Sustainability</i> . It analyzes the implications of gender in mitigating and adapting to climate change throughout the world.
PAHO. (n.d.). Género y desastres naturales . Retrieved from the World Wide Web from: http://www.paho.org/Spanish/AD/GE/genderdisasterssp.PDF	The Pan-American Health Organization presents an analysis on gender and disasters, explaining that an essential part in establishing communities resistant to disasters is the inclusion of the most vulnerable groups -- women in this case.
UNDP. (2006). Integrating Energy Considerations into Poverty Reduction Strategies . Fact sheet. Retrieved from the World Wide Web from: http://www.energyandenvironment.undp.org/undp/index.cfm?module=Library&page=Document&DocumentID=5774	The exhibition "Energizing the Millennium Development Goals" took place during the 14 th session of the Commission on Sustainable Development (CSD-14), held in New York in May 2006. This was one of the 12 energy services of the Millennium Development Goals.

Reference

Description

UNDP. (2005). **Access to Sustainable Energy.** Retrieved from the World Wide Web from: <http://www.energyandenvironment.undp.org/undp/index.cfm?module=Library&page=Document&DocumentID=5543>

This fact sheet provides information about the UNDP portfolio of energy projects and its approach to providing reliable and affordable energy services to achieve the MDGs.

UNDP. (2005). **Effective Water Governance.** Retrieved from the World Wide Web from: <http://www.energyandenvironment.undp.org/undp/index.cfm?module=Library&page=Document&DocumentID=5541>

This fact sheet reflects the importance of the governability of water by using an integrated approach that recognizes its value in mitigating poverty, for human health and for ecosystems.

UNDP-GEF SGP. (2005). **Climate Change Fact Sheet: Partnerships in Shaping National Policy.** Retrieved from the World Wide Web from: <http://sgp.undp.org/downloads/CC%20Policy%20-%20ENGLISH.pdf>

The SGP projects are designed to support activities that help to reduce greenhouse gases and assist local development. They promote poverty mitigation, economic development, energy security and the protection of the local environment.

Thaxton, M. (2004). **Water.** IUCN/Community Conservation Coalition. Retrieved from the World Wide Web from: http://www.generoyambiente.org/admin/admin_biblioteca/documentos/Water.pdf

Part of the series of fact sheets Gender Makes the Difference, of the Office of the IUCN Senior Adviser on Gender. Treats the theme of gender equity in water management, as well as the relation of women to this resource.

UNDP. (2004). **Water Governance for Poverty Reduction: Key Issues and the UNDP Response to the Millennium Development Goals.** Retrieved from the World Wide Web from: http://www.undp.org/water/pdfs/241456%20UNDP_Guide_Pages.pdf

This leaflet highlights the main water challenges faced by developing countries and gives examples of good practices based on the experience of UNDP and its associates. It also makes policy recommendations.

UNDP. (2005). **Sustainable Energy Services: The Gender Dimension.** Retrieved from the World Wide Web from: <http://www.energyandenvironment.undp.org/undp/indexAction.cfm?module=Library&action=GetFile&DocumentAttachmentID=2024>

This fact sheet points out the importance of including the gender dimension in access to energy services to give women and girls more opportunities for a brighter future.

UNDP. (2005). **Water Governance: The Gender Dimension.** Retrieved from the World Wide Web from: <http://www.energyandenvironment.undp.org/undp/indexAction.cfm?module=Library&action=GetFile&DocumentAttachmentID=2025>

This fact sheet indicates that improving water and sanitation services may have a critical impact on the future lives of women and girls.

UNDP. (2006). **Energy for Women, Energy for the MDGs.** Retrieved from the World Wide Web from: <http://www.energyandenvironment.undp.org/undp/indexAction.cfm?module=Library&action=GetFile&DocumentAttachmentID=1659>

This fact sheet explores the relationship between gender and energy and points out the importance of guaranteeing women access to energy services, if the MDGs are to be met.

UNDP. (2007). **Fast Facts: UNDP and Climate Change.** Retrieved from the World Wide Web from: <http://www.energyandenvironment.undp.org/undp/index.cfm?module=Library&page=Document&DocumentID=6506>

Explains UNDP's main areas of collaboration on climate change and how it supports developing countries to: adapt to climate change and reduce vulnerability; build national and local capacities; promote favourable market conditions for sustainable development and climate change mitigation; mobilize resources to improve mitigation and adaptation; and promote access to sustainable energy to comply with the MDGs.

3. Portals and web sites

Site Name	Contents
Programming Climate Change Adaptation http://www.undp.org/gef/adaptation/index.htm	Presents the most up-to-date information about the three GEF financing modalities to carry out adaptation activities. It also provides links to resources on climate change and adaptation and a general summary of UNDP's adaptation portfolio that includes examples of projects now being executed and of guides to prepare proposals.
African Network of Environment Journalists http://www.anej-media.org/home.html	African Network of Environment Journalists contains links to news and articles on climate change, both in the African context and internationally.
Climate Alliance http://www.klimabuendnis.org/	The Climate Alliance is a European initiative covering the theme of climate change from different perspectives such as international policies, local action and indigenous groups. The web site contains much information on the theme, as well as references to other sites of interest.
Climate Change http://www.undp.org/climatechange/	The UNDP page on climate change presents the Programme's latest news, publications and initiatives on the theme.
Climate Crisis http://www.climatecrisis.net/	The official site of Al Gore who received an Academy of Motion Picture Arts and Sciences of the United States award for the documentary "An Inconvenient Truth". It provides basic statistics on climate change and associated information.
Climate for Change – Gender Equality and Climate Policy http://www.climateforchange.net/	This European project attempts to improve women's participation in decision-making on climate change, with emphasis on the local level. The work undertaken with experts is reflected in the publication <i>Climate for Change Toolkit</i> .
Climate Politics http://opendemocracy.net/	Gives access to a collection of articles by high-level political representatives and base activists concerned about climate change. Includes sections on science and the environment, creative energy and carbon-free cities.
Development Gateway – Environment & Development http://topics.developmentgateway.org/environment/highlights/default/showMore.do	In its section on key themes, has a range of articles on climate change as well as on other themes about the environment and development.
DFID's Climate Change Resource Base http://www.dfid.gov.uk/pubs/files/climatechange/keysheetsindex.asp	Has an excellent selection of fact sheets on climate change and poverty. Also contains documents on climate change, policy making to reduce poverty, the regional effects of climate change and relevant international agreements.
ENERGIA http://www.energia.org/	The International Network on Gender and Sustainable Energy has much information on gender and energy, including academic articles, case studies and strategies for action.
Energy Saving Trust http://www.energysavingtrust.org.uk/	This link provides a short summary of key points on climate change. It explains that the phenomenon will be a greater menace to developing communities that will be more affected by its impacts.

Site Name	Contents
Environment and Energy http://www.undp.org/energyandenvironment/gender.htm	<p>Gender is a crosscutting issue in all UNDP's work. UNDP has recognized that gender equality lies at the heart of human development and human rights, as inequalities impede progress in human development, the achievement of the MDGs, and the realization of internationally recognized human rights.</p>
European Environment Commission http://ec.europa.eu/environment/life/	<p>Supports environmental projects and initiatives in Europe and neighbouring countries. Has information on European and international policies, case studies and on adaptation to climate change.</p>
Genanet http://www.genanet.de/index.php?id=2&L=1	<p>Project of the LIFE organization. Promotes women's participation in developing ecological technologies and in projects on environmental conservation and equity; develops educational concepts and facilitates relations between politicians, feminists and conservationists.</p>
Gender and Climate Change http://www.gencc.interconnection.org/	<p>Presents basic information on the relation between gender and climate change, including the themes of mitigation and adaptation.</p>
Gender and Disaster Network http://www.gdnonline.org	<p>The Gender and Disaster Network is an educational project begun by women and men interested in gender relations in the context of disasters.</p>
Gender and Water Alliance http://www.genderandwater.org/	<p>Seeks to promote gender equity on access to and safe management of water sources. Presents a wide range of information and tools to work on the theme, as well as case studies, projects and policies.</p>
INSTRAW: Disaster Management and Mitigation http://www.un-instraw.org/en/index.php?option=content&task=category&sectionid=6&id=52&Itemid=80	<p>Provides guides and strategies to mainstream the gender component in risk management and climate change.</p>
Intergovernmental Panel on Climate Change http://www.ipcc.ch/	<p>Presents relevant information on technical, scientific and socio-economic assessments of climate change caused by human beings. Also includes technical reports, mainly directed at the UNFCCC Parties and the world community in general.</p>
IUCN – Gender and Environment www.generoyambiente.org	<p>Site specializes in linking the gender approach and the environment. It presents a wide range of information including articles about the gender theme and climate change.</p>
Latin America GENERA http://www.americalatinagenera.org	<p>A knowledge platform promoted by UNDP to foster gender equity in the Latin American region. It collects publications, tools, experiences from different stakeholders in the region (governmental, non-governmental, UN system agencies and donors). It has developed a virtual classroom, special forums and other education/communication spaces.</p> <p>It has a joint initiative with the UNDP Bureau for Crisis Prevention and Recovery which seeks to integrate the gender approach into risk management. To do so, it has suggested a first initiative that would lead to articulating knowledge and awareness between both areas by forming a virtual community, developing conceptual frameworks, methodological tools and developing internal and counterpart capacities (a virtual course).</p>

Site Name	Contents
Oxfam: Climate Change http://www.oxfam.org.uk/what_we_do/issues/climate_change/bp104_climate.htm	Contains excellent information related to climate change around the world, as well as links to publications that deal with matters of gender, development and climate change.
Planet can't wait! womentoact.com http://www.womentoact.com/en/	A network through which women are committed to take personal and professional action to fight against the effects of climate change.
The Guardian's Climate Change Special Section http://www.guardian.co.uk/environment/climatechange	Gives access to an interesting collection of articles on climate change, the popularity of carbon markets, promoting the theme (advocacy) and activism. Contains special reports on case studies.
The Pew Center on Global Climate Change http://www.pewclimate.org/	Provides a great deal of information on climate change at regional, national and international levels. Presents information related to creating inter-sectorial strategies and initiatives related to climate change.
UNDP. Energy for Sustainable Development: Overview http://www.undp.org/energy/	By using an integral development approach, the work of UNDP helps to create political frameworks, develop local capacities and provide technical assistance to expand access to energy services to the poorest. It responds in particular to MDG 1: Reduce the number of people living in poverty.
UNEP http://www.unep.org/themes/climatechange/	Contains a great deal of scientific information on climate change, as well as information on international policies and official reports. Provides information on action taken by UNEP and its role with respect to climate change.
UN International Strategy for Disaster Reduction (ISDR) http://www.unisdr.org/	Seeks to construct communities that are more prepared to confront disasters. In order to reduce the loss of human lives as well as social, economic and environmental losses, it promotes, as an integral sustainable development component, raising awareness about the importance of reducing the impacts of disasters.
United Nations System Portal on Climate Change http://www.un.org/climatechange/	Contains up-to-date information on climate change from agencies in the UN system. It offers details and news about conventions, international agreements and specific action by the United Nations on the theme. It also gives links to news, articles and international events concerning climate change.
WEDO http://www.wedo.org/	Provides many articles and much information on the themes of gender, development and global policies. Also contains information on themes related to climate change and gender.
WECF http://www.wecf.de/	Makes great efforts to achieve a healthy environment for all. It uses women's potential to conserve the environment, health and the economy. WECF's activities are based on its members, men as well as women, and their individual views and necessities. Therefore, it implements local solutions and influences international policies. Its reports and documents can be found at this site.
Women's Environmental Network www.wen.org.uk	The network seeks to educate, empower and inform women and men who are concerned about the environment. It also organizes, from the perspective of women, campaigns on the environment and health.

4. Other

Document	Description
Calisiti, N. (2007). Peruanas bajo el temblor. Artemisa noticias, from Pisco. 22 August, 2007. Retrieved from the World Wide Web from: http://www.artemisanoticias.com.ar/site/notas.asp?id=2&idnota=4792	Reports that it is mainly women who demand that humanitarian aid be fairly distributed. They accompanied rescue workers to search for bodies and looked after the children following the earthquake devastation that ravaged Peru in August 2007.
ENERGIA. (2005). Gender, Energy and the MDGs. Energy News, Vol. 8, issue 2, Dec. 2005. Retrieved from the World Wide Web from: http://www.energia.org/resources/newsletter/en-122005.pdf	ENERGY – Information bulletin of the Network on Energy and Sustainable Development. This volume treats themes on gender and sustainable energy. It presents both case studies and theoretical analyses.
Falconi, C. (2006). UNDP's Support for Climate Change Adaptation. Latin America Regional Workshop on Adaptation, 18–20 April 2006, Lima, Peru. Retrieved from the World Wide Web from: http://unfccc.int/files/adaptation/adverse_effects_and_response_measures_art_48/application/pdf/undps_support_for_climate_change_adaptation_-_cecilia_falconi_undp.pdf	Reports that it is mainly women who demand that humanitarian aid be fairly distributed. They accompanied rescue workers to search for bodies and looked after the children following the earthquake devastation that ravaged Peru in August 2007.
OAS. (2006). International Strategy for Disaster Reduction in Latin America and the Caribbean. Retrieved from the World Wide Web from: http://www.eird.org/esp/revista/no_13_2006/art16.htm	The OAS held and presented the results of a Workshop on Natural Disaster Management for the First Inter-American Meeting of Ministers and High Level Authorities on Sustainable Development.
Poverty-Environment Partnership. (2006). Linking Poverty Reduction and Water Management. Retrieved from the World Wide Web from: http://www.energyandenvironment.undp.org/undp/indexAction.cfm?module=Library&action=GetFile&DocumentAttachmentID=1580	This document describes different ways in which improvements in water management help to reduce poverty.
Red Cross. (2007). Climate Change will take its heaviest toll on the poor and the vulnerable. Red Cross, Guayaquil. Information bulletin. Number 5, May 2007. Retrieved from the World Wide Web from: http://www.ifrc.org/Docs/pubs/events/interamerican07/daily-bulletin-05-sp.pdf	The bulletin explains that the greatest impact of climate change will be felt by poor and vulnerable people, with women being specially affected.
Röhr, U. (2006). Gender and climate change. Retrieved from the World Wide Web from: http://www.wecf.de/cms/articles/2006/01/climatechange_docs.php	Presents five documents on matters relating to gender and climate change, within the framework of the UNFCCC COP 11/MOP1.

Document	Description
<p>The World Bank. (2008). Gender and the Digital Divide Seminar Series. Available on the World Wide Web at: http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTGENDER/0..contentMDK:20207786~menuPK:489311~pagePK:148956~piPK:216618~theSitePK:336868,00.html</p>	<p>The World Bank started the Gender and ICTs seminars in 2000. Through this program, practitioners, policy-makers, and academics are invited to discuss the impact of ICT on gender relations, and ways ICT can be used to overcome gender inequalities. This page provides presentation materials from the seminars, including links to video recordings.</p>
<p>UNDP. (2006). The Gender and Water Alliance. Retrieved from the World Wide Web from: http://www.energyandenvironment.undp.org/undp/indexAction.cfm?module=Library&action=GetFile&DocumentAttachmentID=2028</p>	<p>The mission of GWA is to promote women's and men's equitable access to and management of safe and adequate water, for domestic supply, sanitation, food security and environmental sustainability.</p>
<p>UNDP-Cap-Net. (2006). Why Gender Matters: A Tutorial for Water Managers. Retrieved from the World Wide Web from: http://www.energyandenvironment.undp.org/undp/indexAction.cfm?module=Library&action=GetFile&DocumentAttachmentID=1869</p>	<p>The tutorial shows how dealing with questions of gender will make the use of water more efficient in helping to sustain the environment, as well as improving social benefits and equity in the use of hydraulic resources. It will also help to build the capacity to include gender questions in training and educational programmes. It was prepared jointly by Cap-Net and GWA.</p>
<p>UNDP. (2007). Mother Earth: Women and Sustainable Land Management. Retrieved from the World Wide Web from: http://www.undp.org/gef/05/docmnts/publications/Women&SustLandManagement_web.pdf</p>	<p>This publication is part of a UNDP series that includes the gender perspective. It gives practical guidance on how to include the gender perspective when formulating sustainable land management policies.</p>
<p>UNDP. (2007). Sustainable Land Management: The Why and How of Mainstreaming Gender in Sustainable Land Management. Retrieved from the World Wide Web from: http://www.energyandenvironment.undp.org/undp/indexAction.cfm?module=Library&action=GetFile&DocumentAttachmentID=2322</p>	<p>This document is part of a series of publications called <i>Gender Mainstreaming: A Key Driver of Development in Environment & Energy</i>. This guide explains the importance of the gender approach in preparing sustainable land management policies and programmes.</p>
<p>Women's Environmental Network. (May 2007). Women's Manifesto on Climate Change. Women Demand More Action on Climate Change. Press release. Retrieved from the World Wide Web from: http://www.wen.org.uk/general_pages/Newsitems/pr_manifest15.5.07.htm</p>	<p>By means of a manifesto launched by two influential women's organizations, more action is demanded when dealing with climate change, more serious steps to reduce CO₂ emissions and more participation in environmental decision making.</p>

Bibliography

Module 1

Aguilar, L., Blanco, M. and Dankelman, I. (2006). *The Absence of Gender Equity in the Discussions on the International Regime on Access and Benefit Sharing*. Discussion document for the Eighth meeting of the Conference of the Parties to the Convention on Biological Diversity. Switzerland: IUCN

Aguilar, L., Araujo, A., Duncan, P. and Umaña, M. (2007). *Guidelines to Mainstream Gender Equity and Equality into Access and Benefit Sharing of Biodiversity Resources*. Discussion Paper for the International Workshop on Gender and ABS. Costa Rica: IUCN.

Convention on Biological Diversity (2008). *CBD Gender Plan of Action*. Retrieved from the World Wide Web: [UNEP/CBD/COP/9/INF/12/R.](http://www.unep.org/cbd/COP/9/INF/12/R/)

ECOSOC. (1997). *Annual Report*. USA: United Nations.

ECOSOC. (2005). *Resolution 2005/31: Mainstreaming a gender perspective into all policies and programmes in the United Nations system*. USA: United Nations.

ILO. (2008). *Seminar: Igual pago por trabajo de igual valor*. Chile.

Kabeer, N. (2003). *Gender Mainstreaming in Poverty Eradication and the Millennium Development Goals: A handbook for policy-makers and other stakeholders*. UK: Commonwealth Secretariat, International Development Research Centre, Canadian International Development Agency.

Neumayer, E. and Plümper, T. (2007). *The Gendered Nature of Natural Disasters: The Impact of Catastrophic Events on the Gender Gap in Life Expectancy, 1981–2002*. Retrieved from the World Wide Web: [http://papers.ssrn.com/sol3/papers.cfm?abstract_id=874965.](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=874965)

Oxfam. (2007). *Millennium Development Goals Gender Quiz*. Retrieved from the World Wide Web: [http://www.oxfam.org.uk:80/generationwhy/do_something/campaigns/healthandeducation/quiz/index.htm.](http://www.oxfam.org.uk:80/generationwhy/do_something/campaigns/healthandeducation/quiz/index.htm)

Riquer, F. (1993). *Población y género*. Draft. México: Consejo Nacional de Población (CONAPO).

Social Watch. (2007). *Gender Equity Index 2007*. Retrieved from the World Wide Web: http://www.socialwatch.org/en/avancesyRetrocesos/IEG_2008/images/img_full/exterior_eng_gde.gif.

Social Watch. (2008). *Gender Equity Index 2008*. Retrieved from the World Wide Web: http://www.socialwatch.org/en/avancesyRetrocesos/IEG_2008/images/img_full/exterior_eng_gde.gif.

UNESCO. (2003). *UNESCO Gender Mainstreaming Implementation Framework 2002–2007*. Retrieved from the World Wide Web: http://portal.unesco.org/en/ev.php-URL_ID=11340&URL_DO=DO_TOPIC&URL_SECTION=201.html.

USAID. (2007). *Glosario de género y salud*. Centro Nacional para el Desarrollo de la Mujer y la Familia. Retrieved from the World Wide Web: <http://www.siscom.or.cr/cdp/proyecu/cuadernos/modulo1-2/cuad4/cuad4-3.html/>.

UNEP. (2006). *Gender Plan of Action*. IUCN/WEDO/UNEP. Retrieved from the World Wide Web: http://www.unep.org/civil_society/PDF_docs/Unep-Gender-Action-Plan-5Feb07.pdf.

Module 2

Aguilar, L. [In press]. *Putting Words into Action...Analysis of the Status of Gender Mainstreaming in the Main Multilateral Environment Agreements*.

Aguilar, L., Araujo, A., Kring, E., Quesada, A. and Zuñiga, P. (2008). *Guía: Recursos de género para el cambio climático*. Mexico: UNDP.

Convention on Biological Diversity (2008). *CBD Gender Plan of Action*. Retrieved from the World Wide Web: [UNEP/CBD/COP/9/INF/12/R.](http://www.unep.org/cbd/COP/9/INF/12/R/)

Facio, A. (1996). "El Principio de Igualdad ante la Ley". In: Movimiento Manuela Ramos (1996) *Antología de Derechos Humanos de las Mujeres*. Lima, Peru.

García, S. (1999). "Algunas consideraciones sobre la protección internacional de los derechos económicos, sociales y culturales de la mujer". In: Centro Integral de la Mujer, el Niño y el Joven (CIM). (1999) *Obra colectiva Mujer y Pobreza*. Argentina.

ISDR (2005). *Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters*. World Conference on Disaster Reduction 18-22 January 2005, Kobe, Hyogo, Japan.

Knabe, F. and Poulsen, L. (2004). *How the Convention to Combat Desertification and Drought Has Promoted the Role of Women in Decision-Making*. Switzerland: IUCN.

Lambrou, Y. and Laub, R. (2004). *Gender Perspective in the Conventions on Biodiversity, Climate Change and Desertification*. Italy: FAO, Natural Resource Management and Environment Department.

Quesada-Aguilar, A. and Mata, G. (2008). *Gender and National Biodiversity Strategies and Action Plans (NBSAPs)*. Fact sheet IUCN-CBD.

Tobin, B. and Aguilar, L. (2007). *Mainstreaming Gender Equality and Equity in ABS Governance*. Costa Rica: IUCN

Tobin, B. (2007). *The Role of Customary Law in ABS and TK Governance: Perspectives from Andean and Pacific Island Countries*. Japan: UNU-IAS.

United Nations International Strategy for Disaster Reduction. 2007. *Words Into Actions: A Guide for Implementing the Hyogo Framework*. Geneva, Switzerland: United Nations secretariat of the International Strategy for Disaster Reduction. Available on-line: http://www.preventionweb.net/globalplatform/first-session/docs/Background_docs/Words_into_Action.pdf (Accessed on 8 July 2007).

Module 3

Aguilar, L. [In press]. *Climate Connection. Women and Climate Change: Vulnerabilities and Adaptive Capacities*. State of the World 2009.

Aguilar, L., Araujo, A. and Quesada-Aguilar, A. (2007). *Gender and climate change*. Fact sheet IUCN.

Cramer, W. (2006). "Air pollution and climate change both reduce Indian rice harvests". *Proceedings of the National Academy of Sciences* 103(52): 19609–19610.

Enarson, E. (1998). "Through Women's Eyes: A Gendered Research Agenda for Disaster Social Science". *Disasters* 22(2): 157–173.

FAO. (1994). *Afforestation initiative, Kakamega, Kenya*. Italy: FAO.

FAO. (2008). *Gender and Food Security: Agriculture*. Retrieved from the World Wide Web: <http://www.fao.org/Gender/en/agri-e.htm>.

IPCC. (2001). *Summary for Policymakers. Climate Change 2001: Impacts, Adaptation, and Vulnerability*. Report of Working Group II of the International Panel on Climate Change. Switzerland: IPCC.

Ikeda, K. (1995). *Gender Differences in Human Loss and Vulnerability in Natural Disasters: A Case Study from Bangladesh*. Indian Journal of Gender Studies, Vol. 2, No. 2, 171-193. New Delhi, India: Sage Publications.

Kabeer, N. (2003). *Gender Mainstreaming in Poverty Eradication and the Millennium Development Goals: A handbook for policy-makers and other stakeholders*. UK: Commonwealth Secretariat, International Development Research Centre, Canadian International Development Agency.

Moser, C. and Satterthwaite, D. (2008). *Pre-poor Climate Change Adaptation in the Urban Centres of Low-and Middle-Income Countries*. Workshop on Social Dimension of Climate Change. USA: World Bank.

National Biodiversity Strategies and Action Plans (NBSAPs) from: Kenya (2000) and Liberia (2004). Retrieved from the World Wide Web: <https://www.cbd.int/nbsap/search/>.

Nelson, V., Meadows, K., Cannon, T., Morton, J. and Martin, A. (2002). "Uncertain Predictions, Invisible Impacts, and the Need to Mainstream Gender in Climate Change Adaptations". *Gender & Development* 10(2): 51–59.

Neumayer, E. and Plümper, T. (2007). *The Gendered Nature of Natural Disasters: The Impact of Catastrophic Events on the Gender Gap in Life Expectancy, 1981–2002*. Retrieved from the World Wide Web: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=874965.

Oxfam. (2005). *The tsunami's impact on women*. Retrieved from the World Wide Web: http://www.oxfam.org/en/files/bn050326_tsunami_women/download.

Oxfam. (2007). *Millennium Development Goals Gender Quiz*. Retrieved from the World Wide Web: http://www.oxfam.org.uk:80/generationwhy/do_something/campaigns/healthandeducation/quiz/index.htm.

Peterson, K. (2007). *Reaching out to women when disaster strikes*. Soroptimist White Paper. Retrieved from the World Wide Web: http://www.soroptimist.org/sia/AM/Template.cfm?Section=White_Papers&Template=/CM/ContentDisplay.cfm&ContentID=4747.

UNDP. (2007). *Human Development Report 2007/2008. Fighting climate change: Human solidarity in a divided world*. USA: UNDP.

WHO. (2008). Malaria and pregnancy. Retrieved from the World Wide Web: <http://www.who.int/malaria/pregnantwomenandinfants.html>.

Sources for Table 1:

Coral bleaching:

Donner, S.D., Knutson, T.R. and Oppenheimer, M. (2007). "Model-based assessment of the role of human-induced climate change in the 2005 Caribbean coral bleaching event". *Proceedings of the National Academy of Sciences* 104(13): 5483–5488.

Women's share in tourism:

Hemmati, M. (Ed.) (1999). *Gender & Tourism: Women's Employment and Participation in Tourism*. UK: United Nations Environment and Development UK Committee (UNED-UK).

Morocco drought figures:

Nelson, V., Meadows, K., Cannon, T., Morton, J. and Martin, A. (2002). "Uncertain Predictions, Invisible Impacts, and the Need to Mainstream Gender in Climate Change Adaptations". *Gender & Development* 10(2): 51–59.

Male to female deaths:

Neumayer, E. and Plümpner, T. (2007). "The Gendered Nature of Natural Disasters: The Impact of Catastrophic Events on the Gender Gap in Life Expectancy, 1981–2002". *Annals of the Association of American Geographers* 97(3): 551–566.

Malaria and cholera:

Rodo, X., Pascual, M., Fuchs, G., and Faruque, A. (2002). "ENSO and Cholera: A Non-stationary Link Related to Climate Change?" *Proceedings of the National Academy of Sciences* 99(20): 12901–06.

Zhou, G., Minakawa, N., Githeko, A.K. and Yang, G. (2004). "Association Between Climate Variability and Malaria Epidemics in the East African Highlands". *Proceedings of the National Academy of Sciences* 101(8): 2375–80.

Medical services and workload:

Nelson, V., Meadows, K., Cannon, T., Morton, J. and Martin, A. (2002). "Uncertain Predictions, Invisible Impacts, and the Need to Mainstream Gender in Climate Change Adaptations". *Gender & Development* 10(2): 51–59.

Species extinctions:

Thomas, C.D., Cameron, A., Green, R.E., Bakkenes, M., Beaumont, L.J., Collingham, Y., Erasmus, B.F.N., Ferreira de Siqueira, M., Grainger, A., Hannah, L., Hughes, L., Huntley, B., van Jaarsveld, A.S., Midgley, G.F., Miles, L., Ortega-Huerta, M.A., Peterson, A.T., Phillips, O.L. and Williams, S.E. (2004). "Extinction risk from climate change". *Nature* 427: 145–148.

Decreased African crop production:

Stige, L.C., Stave, J., Chan, K.-S., Ciannelli, L., Pettorelli, N., Glantz, M., Herren, H.R. and Stenseth, N.C. (2006). "The effect of climate variation on agro-pastoral production in Africa". *Proceedings of the National Academy of Sciences* 103(9): 3049–3053.

Rural women crop production:

FAO. (2008). *Gender and Food Security: Agriculture*. Retrieved from the World Wide Web: <http://www.fao.org/Gender/en/agri-e.htm>.

Climate-related crop changes:

FAO. (n.d.). *Gender and food security*. Synthesis report of regional documents: Africa, Asia and Pacific, Europe, Near East, Latin America. Retrieved from the World Wide Web: <http://www.fao.org/docrep/X0198E/X0198E00.htm>.

Module 4

Aguilar, L., Araujo, A., Kring, E., Quesada, A. and Zuñiga, P. (2008). *Guía: Recursos de género para el cambio climático*. Mexico: UNDP.

Anderson, C. (2002). *Gender Matters: implications for climate variability and climate change and for disaster management in the Pacific islands*. Retrieved from the World Wide Web: <http://www.gencc.interconnection.org/resources.htm>

Bradshaw, S. (2004). *Socio-economic Impacts of Natural Disasters: a Gender Analysis*. Santiago de Chile: United Nations.

Brody, J., Demetriades, J. and Esplen, E. (2008). *Gender and climate change: mapping the linkages. A scoping study on knowledge and gaps*. UK: Prepared for the UK Department for International Development by BRIDGE, Institute of Development Studies (IDS).

Burón, C. (2007). *Gestión de riesgo: Una nueva visión de los desastres*. Retrieved from the World Wide Web: <http://www.sld.cu/sitios/desastres/n3.php?p=administración>

Cannon, T. (2002). "Gender and climate hazards in Bangladesh". *Gender & Development* 10(2): 45–50.

CIDA (n.d.). *Coastal zone management & equality between women and men*. Retrieved from the World Wide Web: [http://www.acdi-cida.gc.ca/INET/IMAGES.NSF/vLUIImages/Policy/\\$file/12zones.pdf](http://www.acdi-cida.gc.ca/INET/IMAGES.NSF/vLUIImages/Policy/$file/12zones.pdf)

Convention on Biological Diversity (CBD). (2007). *International Day for Biological Diversity: Climate Change and Biological Diversity*. Secretariat of the Convention on Biological Diversity.

Dankelman, I. (2008). *Mainstreaming gender in climate change policies: urgencies, challenges and perspectives*. Paper presented at the Third Global Congress of Women in Politics and Governance on the theme of gender and climate change, organized by CAPWIP. The Philippines.

Davis, I., Peiris De Costa, K., Alam, K., Ariyabandu, M.M., Bhatt, M.R., Schneider-Sliwa, R. and Balsari, S. (2005). *Tsunami, Gender, and Recovery: Special Issue for International Day for Disaster Risk Reduction*. South Asia Disasters.

Donner, S.D., Knutson, T.R. and Oppenheimer, M. (2007). "Model-based assessment of the role of human-induced climate change in the 2005 Caribbean coral bleaching event". *Proceedings of the National Academy of Sciences* 104(13): 5483–5488.

Duncan, K. (2007). "Global Climate Change and Women's Health". In *Women & Environments International Magazine*. Toronto: WEI. Retrieved from the World Wide Web: www.redorbit.com/news/health/890479/global_climate_change_and_womens_health/index.html

Enarson, E. (2000). *Gender and Natural Disasters*. IPCRR Working Paper no.1. International Labour Organization. Retrieved from the World Wide Web: <http://www.ilo.org/public/english/employment/recon/crisis/publ/index.htm>

Enarson, E., Meyreles, L., González, M., Hearn Morrow, B., Mullings, A. and Soares, A. (2003). *Working with women at risk: practical guidelines for assessing local disaster risk*. International Hurricane Research Centre, Florida International University. USA.

FAO . (1999). *Gender Dimensions in Biodiversity Management and Food Security: Policy and Programme Strategies for Asia*. India: FAO Regional Technical Consultation.

FAO. (2000). *Gender and nutrition*. Retrieved from the World Wide Web: http://www.fao.org/sd/2001/PE0703a_en.htm

FAO. (2007). *Gender and Food Security: Agriculture*. Retrieved from the World Wide Web: <http://www.fao.org/Gender/en/agri-e.htm>

Gault, B., Hartmann H., Jones-DeWeever A. and Misha Werschkul M. and Erica Williams (2005). *The Women of New Orleans and the Gulf Coast: Multiple Disadvantages and Key Assets for Recovery*. Part I: Poverty, Race, Gender, and Class. Institute for Women's Policy Research. Retrieved from the World Wide Web: <http://www.iwpr.org/pdf/D464.pdf>

Gender and Disaster Network. (2005). Retrieved from the World Wide Web: <http://www.gdnonline.org/index.php>

Gomáriz, E. (1999). *Género y desastres*. Introducción conceptual y criterios operativos. Fundación Género y Sociedad. Costa Rica.

GTZ and OSS. (2007). *Climate change adaptation and fight against desertification*. Introductory note No.1. Tunis.

Ikeda, K. (1995). "Gender Differences in Human Loss and Vulnerability in Natural Disasters: A Case Study from Bangladesh". *Indian Journal of Gender Studies*, Vol. 2, No. 2, 171-193 . New Delhi, India: Sage Publications.

Institute for Women's Policy Research. (2006). *The Women of New Orleans and the Gulf Coast: Multiple Disadvantages and Key Assets for Recovery*. Gender, Race, and Class in the Labour Market. Part II of a 2-Part Series. Williams, E. et al. Retrieved from the World Wide Web: <http://www.iwpr.org/pdf/D465.pdf>

IPCC. (2001). *Summary for Policymakers. Climate Change 2001: Impacts, Adaptation, and Vulnerability*. Report of Working Group II of the International Panel on Climate Change. Switzerland: IPCC.

IPCC. (2007). *Summary for Policymakers*. In: *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (Solomon, S., Qin, D., Manning, M., Chen, Z., Marquis, M., Averyt, K.B., Tignor, M. and Miller, H.L. (eds.)). Cambridge, UK and New York, USA: Cambridge University Press.

ISDR. (2008). *Gender Perspectives: Integrating Disaster Risk Reduction into Climate Change Adaptation: Good Practices and Lessons Learned*. Geneva: ISDR.

Katwikirize, S. (2002). *Understanding resettlement capacities and vulnerabilities of displaced male and female headed households: A case of three camps in northern Uganda*. World Vision Uganda, Cranfield University and the Gender and Disaster Network. Retrieved from the World Wide Web: <http://www.ssri.hawaii.edu/research/GDWwebsite/pdf/Katwikirize.pdf>

Kinoti, K. (2008). *Natural Disaster Reduction: Lessons on Empowering Women*. AWID. Retrieved from the World Wide Web: <http://www.awid.org/eng/Issues-and-Analysis/Library/Natural-Disaster-Reduction-Lessons-on-Empowering-Women2>

Lara, S. (2004). *Fact Sheet: Millennium Development Goals, Gender Makes the Difference*. IUCN.

MAAS. 2004. *Devastating Floods hit Bangladesh. Looking for help from NGOs*. Retrieved from the World Wide Web: <http://www.undpi.org/index.php?name=News&file=article&sid=146>

Mehta, Manjari. (2007). *Gender matters lessons for disaster risk reduction in South Asia*. International Centre for Integrated Mountain Development. Retrieved from the World Wide Web: <http://www.gdonline.org/resources/Gender&disaster-preparednessICIMOD.pdf>

Meyreles, L. (2000). *Huracán Georges en la República Dominicana: Sociedad civil y participación local*. Asociación de Investigación y Estudios Sociales (ASIES). Guatemala.

Meyreles, L. (2003). *Community profiles. Working with women at risk*. Unpublished document.

Meyreles, L. (2004). *República Dominicana y riesgo a desastres: Procesos de degradación y vulnerabilidades*. Manuscript. FLACSO. Dominican Republic.

Neumayer, E. and Plümper, T. (2007). *The Gendered Nature of Natural Disasters: The Impact of Catastrophic Events on the Gender Gap in Life Expectancy, 1981–2002*. Retrieved from the World Wide Web: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=874965.

Oslo Policy Forum Report. (2008). *Changing the Way We Develop: Dealing with Disasters and Climate Change*. Norwegian Ministry of Foreign Affairs, Prevention Consortium and UNDP. Norway.

Oxfam. (2005). *The tsunami's impact on women*. Retrieved from the World Wide Web: http://www.oxfam.org/en/files/bn050326_tsunami_women/download.

Oxfam. (2008). *Sahena, The Voice of Climate Change*. Retrieved from the World Wide Web: www.oxfam.org.uk/applications/blogs/campaigners/2008/03/sahena_the_voice_of_climate_ch.html

Panitchpakdi S. (2008). *Statement by Secretary-General of UNCTAD*. Third Global Congress of Women in Politics and Governance: Gender in Climate Change and Disaster Risk Reduction. The Philippines.

Peterson, K. (2007). *Reaching out to women when disaster strikes*. Soroptimist White Paper. Retrieved from the World Wide Web: http://www.soroptimist.org/sia/AM/Template.cfm?Section=White_Papers&Template=/CM/ContentDisplay.cfm&ContentID=4747.

Pirard, P., Vandentorren, S., Pascal, M., Laaidi, K., Le Tertre, A., Cassadou, S. and Ledrans, M. (2005). *Summary of the Mortality Impact*. Assessment of the 2003 Heat Wave in France. Euro Surveill. 2005. 10 (7):153-6. Retrieved from the World Wide Web: <http://www.eurosurveillance.org/em/v10n07/1007-224.asp>

República Dominicana, Secretariado Técnico de la Presidencia and Banco de Interamericano de Desarrollo.(2001). *Los desastres ocurridos en la República Dominicana 1966-2000*. Ingeniar LTDA- LA RED-ICF Consulting. Santo Domingo.

Sánchez del Valle, R. (2000). *Local risk management in Central America. Lessons learnt from the FEMID project*. Retrieved from the World Wide Web: <http://www.crid.or.cr/digitalizacion/pdf/spa/doc12912/doc12912-9.pdf>

Thullier, W. (2007). "Climate Change and the Ecologist", in: *Nature* 448/2: 550-552. USA.

Turner, T. and Brownhill, L. (2006). *Nigerian Commoners' Gifts to Humanity: Climate Justice and the Abuja Declaration for Energy Sovereignty*: Centre for Civil Society.

UNDP. (2007). *Human Development Report 2007/2008. Fighting climate change: Human solidarity in a divided world*. USA: UNDP.

Wilches-Chaux, G. (1998). *Auge, caída y levantada de Felipe Pinillo, mecánico y soldador o Yo voy a correr el riesgo*. LA RED-ITDG. Perú.

Williams, E., Sorokina, O, Jones-DeWeever, A. and Hartmann, H. (2006). *The Women of New Orleans and the Gulf Coast: Multiple Disadvantages and Key Assets for Recovery*. Part II: Poverty, Race, Gender, and Class in the Labour Market.

Wisner, et al. (2006) . "Run tell your neighbor! Hurricane warning in the Caribbean". In: *World Disasters Report 2005*. International Federation of Red Cross and Red Crescent Societies. Geneva.

Women's Environment and Development Organization (WEDO), ABANTU for Development in Ghana, ActionAid Bangladesh and ENDA Senegal. (2008). *Gender, Climate Change and Human Security: Lessons from Bangladesh, Ghana and Senegal*. Retrieved from the World Wide Web: <http://www.wedo.org/files/HSN%20Study%20Final%20May%2020,%202008.pdf>.

World Health Organization (WHO) (2003). *Climate change and human health – Risks and responses*. Retrieved from the World Wide Web: <http://www.who.int/globalchange/climate/en/ccSCREEN.pdf>

Module 5

Aboh, C.L. & Akpabio, I. A. (2009). Gender and Analysis of Common Agroforestry Practices in Akwa Ibom State, Nigeria. *Agricultural Journal* 3 (3):185-189.

Agarwal, B. (2002). "Participatory Exclusions, Community Forestry, and Gender: An Analysis for South Asia and a Conceptual Framework". *World Development* 29(10): 1623–1648.

Aguilar, L., Araujo, A. and Quesada-Aguilar, A. (2007). *Reforestation, Afforestation, Deforestation, Climate Change and Gender*. Fact Sheet. Costa Rica: IUCN.

Aguilar, L., Araujo, A., Kring, E., Quesada, A. and Zuñiga, P (2008). *Guía: Recursos de género para el cambio climático*. Mexico: UNDP.

Bala, G., Caldeira, K., Wickett, M., Phillips, T.J., Lobell, D.B., Delire, C. and Mirin, A. (2007). "Combined climate and carbon-cycle effects of large-scale deforestation". *Proceedings of the National Academy of Science* 104(16): 6550–6555.

Brody, A., Demetriades, J. and Esplen, E. (2008). *Gender and climate change: mapping the linkages*. UK: BRIDGE, Institute of Development Studies (IDS).

CCBA. (2005). *Climate Community and Biodiversity Project Design Standards (First Edition)*. USA: CCBA.

CSD. (2007). *Chairman's Summary: Fifteenth Session of the Commission on Sustainable Development*. Retrieved from the World Wide Web: http://www.un.org/esa/sustdev/csd/csd15/documents/chair_summary.pdf.

Drexhage, J. (2006). *Climate Change Situation Analysis*. Switzerland: IUCN-IISD.

ENERGIA. (2007). *Where Energy is Women's Business: National and Regional Reports from Africa, Asia, Latin America and the Pacific*. Retrieved from the World Wide Web: http://www.energia.org/csd_book.html.

Hemmati, M. (2008). *Gender perspectives on climate change*. Interactive expert panel on the theme. UN Commission on the Status of Women. 52nd session, 25 February–7 March 2008. New York.

IPCC [Core Writing Team, Houghton J. T., Ding Y., Griggs D. J., Noguera M., Trenberth, K., van der Linden, X. Dai, K. Maskell, and C. A. Johnson (eds.)]. (2001). *Climate change 2001: The Scientific Basis*. Part of the contribution of Working Group I to the Third Assessment Report of the Intergovernmental Panel on Climate Change (IPCC). Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 881pp.

Johnsson-Latham, G. (2007). *A Study on Gender Equality as a Prerequisite for Sustainable Development*. Sweden: The Environment Advisory Council, Ministry of the Environment.

Joshi, G. (2007). *The Chipko movement and women*. People's Union for Civil Liberties. Retrieved from the World Wide Web: www.pucl.org/from-archives/Gender/chipko.htm.

Maathai, W. (2008). *Wangari Maathai on climate change. The Green Belt Movement*. Retrieved from the World Wide Web: <http://greenbeltmovement.org/c.php?id=17>.

OECD. (2008a). *Promoting Sustainable Consumption: Good practices in OECD Countries*. France: OECD.

OECD. (2008b). *Environmental Policy and Household Behaviour: Evidence in the Areas of Energy, Food, Transport, Waste and Water*. France: OECD.

UNDP. (2007). *Gender Mainstreaming in Environment and Energy: Training Manual*. Retrieved from the World Wide Web: <http://www.undp.org:80/energyandenvironment/gender.htm>.

The World Bank. (2009). *Gender and Agriculture Sourcebook*. Washington: The World Bank

UNDP and ENERGIA. (2004). *Gender and Energy for Sustainable Development: A Toolkit and Resource Guide*. Retrieved from the World Wide Web: www.undp.org/energy/genenergykit/genderengtoolkit.pdf.

UNEP. (2007). *The fourth Global Environment Outlook: environment for development (GEO-4)*. Kenya: UNEP.

Wamukonya, N. and Skutsch, M. (2002). "Gender Angle to the Climate Change Negotiations". *Energy and Environment* 13(1): 115–124.

Women's Environmental Network and National Federation of Women's Institutes. (2007). *Women's Manifesto on Climate Change*. Retrieved from the World Wide Web: http://www.wen.org.uk/general_pages/reports/manifesto.pdf.

Worldwatch Institute. (2008). *The State of Consumption Today*. Retrieved from the World Wide Web: <http://www.worldwatch.org/node/810>.

Module 6

Clancy, J., Oparaocha, S. and Roher, U. (2004). "Gender Equity and Renewable Energies". Thematic background paper for International Conference for Renewable Energies, Bonn, Germany.

Culley, M. and Angelique, H. (2003). "Women's gendered experiences as long-term Three Mile Island activists". *Gender and Society* 17(3 – June 2003): 445–61.

Gurumurthy, A. (2005). *Empowering Women: Promoting skill transfer through ICTs*. Paper presented in One World South Asia Fourth Annual Regional Meeting. Retrieved from the World Wide Web: http://www.i4donline.net/march05/empowering_full.asp

Karlsson, G. (2008). "Engaging women in small-scale production of biofuels for rural energy". Presentation summary for Stockholm Environment Institute side event at WIREC: North-South-South Forum on Biofuels, Climate and Sustainable Development. ENERGIA. Retrieved from the World Wide Web: http://www.energia.org/pubs/papers/2008_karlsson_sei-wirec_pres-sum.pdf.

Makhabane, T. (2002). "Promoting the role of women in sustainable energy development in Africa, networking and capacity-building". *Gender & Development Journal*. 10(2), 84-91.

Narayan, D. (1995). *Contribution of People's Participation: Evidence from 121 Rural Water Supply Projects*. The World Bank, Washington, D.C.

Ndiaye, G. (2007). *Impact du Changement Climatique sur les Ressources en Eau du Sénégal*. Senegal.

Roehr, U. (2001). "Gender and Energy in the North". Background paper for the Expert Workshop, Gender Perspectives for Earth Summit 2002: Energy, Transport, Information for Decision-Making. Berlin, Germany.

Rossi, A. and Lambrou, Y. (2008). *Gender and equity issues in liquid biofuels production. Minimizing the risks to maximize the opportunities*. Italy: FAO.

Sathaye, J. (2002). *Climate change mitigation: barriers, opportunities and technology transfer*. USA: Lawrence Berkeley National Laboratory, University of California. Retrieved from the World Wide Web: <http://72.14.205.104/search?q=cache:vODISqDFQJAJ:ies.lbl.gov/ppt/ccmbott.pdf+what+are+climate+change+mitigation+technologies&hl=en&ct=clnk&cd=9>.

UNFCCC. (n.d.). *Fact sheet on technology*. Retrieved from the World Wide Web: http://unfccc.int/files/press/backgrounders/application/pdf/fact_sheet_on_technology.pdf.

Wamukonja, N. and Skrutch, M. (2001). "Is there a gender angle to the climate change negotiations?" Prepared for ENERGIA for distribution at CSD-9, New York, 16–27 April. Retrieved from the World Wide Web: http://www.energia.org/pubs/papers/wamukonya_skutsch.pdf.

Women's Environment and Development Organization (WEDO), ABANTU for Development in Ghana, ActionAid Bangladesh and ENDA in Senegal. (2008). *Gender, Climate Change and Human Security: Lessons from Bangladesh, Ghana and Senegal*. Retrieved from the World Wide Web: <http://www.wedo.org/files/HSN%20Study%20Final%20May%202020,%202008.pdf>.

Women for Climate Justice. (2007). Press release. December 7, 2007, COP13-Bali, Indonesia.

World Bank .(2004). *Engendering Information & Communication Technologies*. Gender and Development Group, and Global Information and Communication Technologies Department. Retrieved from the World Wide Web: <http://siteresources.worldbank.org/INTGENDER/Seminar-Series/20260878/ictbrochure.pdf>

World Bank. (2004). *Module III. Integrating gender into development projects. Learning Case I*. Retrieved from the World Wide Web: <http://info.worldbank.org/etools/docs/library/192862/Module3/cases/M3LC1AgriculturalKnowledge.pdf>.

Module 7

Brody, A., Demetriades, J. and Esplen, E. (2008). *Gender and climate change: mapping the linkages*. BRIDGE-Institute of Development Studies. United Kingdom. Retrieved from the World Wide Web: http://www.bridge.ids.ac.uk/bridge/reports/Climate_Change_DFID.pdf

GCCA. (2008). *Gender and Climate Change Workshop Report*. November 19-20. New York.

GenderCC Network – Women for Climate Justice. (2007). *Gender: Missing Links in Financing Climate Change Adaptation and Mitigation*. Unpublished position paper presented at the UNFCCC Cop 13. Bali, Indonesia. Retrieved from the World Wide Web: http://www.gendercc.net/fileadmin/inhalte/Dokumente/UNFCCC_conferences/gender_cc_financing_positionpaper_bali_final.pdf

Perlata, A. (2008). *Gender and Climate Change Finance - A Case study from the Philippines*. WEDO. New York.

Skutsch, M. (2004). CDM and LULUCF: what's in it for women? A note for the Gender and Climate Change Network. Netherlands. Retrieved from the World Wide Web: <http://www.gencc.interconnection.org/skutsch2004.pdf>

Srabani, R. (2008). *Women's Expertise Key to Rolling Back Deserts*. Inter Press Service, September 27. Retrieved from the World Wide Web: <http://ipsnews.net/news.asp?idnews=34899>

Tirpak, D., Gupta, S., Perczyk, D. and Thioye, M. (2008). *National policies and their linkages to negotiations over a future international climate change agreement*. An Environment & Energy Group Publication. UNDP. New York.

Turrall, S. (2006). *Learning from the Renewable Natural Resources Research Strategy* (adapted from Bennett, E 2005 *Gender and the DFID RNRRS: A Synthesis*), UK: DFID.

United Nations. (2007). *51st session of the United Nations Commission on the Status of Women*. 26 February to 9 March 2007. Informal expert panel: Financing for gender equality and the empowerment of women. Moderator's Summary. New York.